SCHEDULE 4.3 — OPERATIONAL SERVICES

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1. OVERVIEW OF SERVICES

1.1. Overview

This Section describes the Services to be provided by the Contractor in various Service Frameworks, collectively also described herein as the Statement of Work (SOW). The objectives and requirements described in this Section 1 Overview of Services apply to all of the Service Frameworks unless specifically modified or augmented in a particular Service Framework. Capitalized terms used herein shall have the meaning assigned to them in Schedule A (Defined Terms) to the Agreement unless otherwise expressly defined in this Schedule.

1.2. High Level Requirements

1.2.1. Contractor shall provide IT and telecommunications services to the County with a high level of quality and performance that meet or exceed the Minimum Acceptable Service Levels (MASLs)

1.2.2. Contractor shall provide equal or better service on all Service Frameworks in performance, capacity, and functionality than prior to inception of this Agreement, except per the Agreement during Transition

1.2.3. Contractor shall improve the efficiency and effectiveness of County IT and telecommunications services over the life of the Agreement.

1.2.4. Contractor shall provide the technology expertise and resources required to provide Services in the most efficient and effective manner to meet the County's requirements

1.2.5. Contractor shall participate in, and support, the County's retained authorities in architecture and technology planning and standards establishment.

1.3. Service Environment

1.3.1. Scope of Environment

All County IT and telecommunications services as described in this Schedule are within the scope of the Contractor's responsibilities, unless otherwise described in this Agreement.

1.3.2. Hardware and Software

Contractor shall provide all hardware, software, tools and knowledge databases used in the delivery of Services for each Service Framework. Such assets will be provisioned, installed, managed, maintained, and supported by the Contractor. This includes, but is not limited to, the tools listed in Appendix 4.3.1.

1.3.3. Facilities

1.3.3.1.   County

All County Locations are within scope of the Agreement.

1.3.3.2.   Contractor

All facilities (outside of County facilities) that are utilized by the Contractor to provide the Services will be provided, maintained, provisioned, and managed by the Contractor.

1.3.4.   Personnel

Contractor will responsible for providing staff resources with the skills, qualifications, and experience to perform the Services in a high quality manner and to meet or exceed MASLs. Contractor's Program Manager, Contract Manager and two selected Service Framework Leads will reside at the County Administration Center. A listing of Contractor Personnel to reside at various County Locations will be developed and included in the final Transition Plan.

1.3.5.   Policies, Procedures and Standards

Contractor will be responsible for complying with all of the County's policies, procedures, and standards, including the County Standards and Procedures Manual.

1.3.6.   Agreement & Licenses

Contractor will be responsible for the acquisition, management, and support of all agreements and licenses required to provide the Services.

1.3.7.   Required Language(s)

English is the current required language. Contractor will ensure that the level of English communications by all Contractor resources is sufficient to (i) be understandable by County staff and (ii) understand County staff.

1.3.8.   Service Requirements

Service requirements in this Section are described using the structure depicted below:

Overview of Services	Service Frameworks	Service Framework Components	MASLs

o Overview
o Objectives
o Service Environment
o Service Management
o Reports
	o Overview
	o High Level Requirements
	o Service Environment
	o Roles and Responsibilities
	  o Plan
	  o Build
	  o Operate
		o Overview
		o High Level Requirements
		o Service Environment
		o Roles and Responsibilities
		  o Plan
		  o Build
		  o Operate
			o Overview
			o Summary
			o Detail
			o Transition
			o Special Reqs

These apply to all Service Frameworks and Service Framework Components	**These apply to all the Service Framework Components within the specific Service Framework**		

Overview of Services		
	Help Desk	Personal Computing
	Applications	Video-Conferencing
	Desktop	Catalog
	Network	Audio
	Data Center	Video Streaming

Cross-Functional

MASLs

Example: The Statement of Work objectives and requirements related to a Desktop PC are included in: 1) Overview of Services (which apply to the entire Statement of Work); 2) Desktop Services (which apply to all the components of the Desktop Services Framework); 3) Personal Computing (which apply to all end-user computing devices in the Desktop Services Framework); and 4) Cross-Functional Services (which apply to all Service Frameworks).

The descriptions of Operational Services in this Schedule are based on the following hierarchy of objectives and requirements:

1.3.8.1.   This Overview of Services provides high-level requirements that apply to all of the Service Frameworks

1.3.8.2.   Each individual Service Framework includes a summary section describing requirements that apply to all of the Components within the given Service Framework

1.3.8.3.   Each Service Framework Component includes requirements that apply specifically to the Component, except for the Cross Functional Service Framework

1.3.8.4.   The Cross Functional Service Framework Components include requirements that apply to all of the other Service Frameworks and Service Framework Components

1.3.8.5.   The MASL Section contains descriptions of minimum acceptable service level requirements that apply across the Service Frameworks

1.3.8.6. Within each section, tables describing Requirements, Roles, and Responsibilities are included. These tables are organized into the County's Plan, Build, and Operate structure

2. HELP DESK SERVICES

2.1. Help Desk Services Overview

This section pertains to the Help Desk Services framework. Help Desk Services consist of Plan, Build, and Operate centralized services to triage, process, track, and report on End-User requests for information and services.

2.2. Help Desk Service High Level Requirements

2.2.1. Contractor shall improve IT customer service and Problem resolution speed.

2.2.2. Contractor shall improve County efficiency and effectiveness by providing and utilizing knowledge databases and best practices in the areas of reporting, logging, tracking, resolving and reporting of IT Problems and Work Requests.

2.2.3. Contractor's Help Desk Services will be part of a closed-feedback loop process, so that the handling of issues will incorporate lessons learned, best practices, and appropriate solutions to improve economies, efficiencies, and performance.

2.2.4. Contractor shall ensure proficient and sufficiently skilled Help Desk support is available for new and emerging technologies as well as the County's legacy technologies.

2.2.5. Contractor shall assist in the management and communication of modifications to the Services environment. All Install Move, Add and Remove (IMAR) requests will be facilitated by the Help Desk, including End-User notifications.

2.3. Help Desk Services Requirements, Roles and Responsibilities

The following table identifies Plan, Build and Operate requirements, roles and responsibilities associated with Help Desk Services.

Help Desk Services: Plan, Build and Operate Requirements, Roles and Responsibilities.

Help Desk Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit Help Desk solutions that best meet County business needs and service–level requirements	X	
2. Review and approve Help Desk solutions and service levels		X
3. Perform operational planning for Help Desk capacity and performance purposes	X	

Help Desk Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
4. Perform analysis of County environment to identify the appropriate sets of skills, training, and experience needed by Help Desk staff	X	
5. Produce and submit operational policies and procedures including escalation	X	
6. Review and approve operational policies and procedures		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
7. Develop and improve Help Desk scripts as appropriate to improve performance	X	
8. Provide all test services required to support Help Desk Services	X	
9. Produce and submit all test documentation to County	X	
10. Review and approve all test documentation		X
11. Provide all deployment services required to support Help Desk Services	X	
12. Produce and submit to County all deployment documentation	X	
13. Review and approve all deployment documentation		X
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
14. Manage all trouble tickets and services requests from inception to closure (e.g. recording, troubleshooting, escalating, coordinating, reporting, closing)	X	
15. Provide Help Desk Services, including provision, operation and maintenance of integrated Help Desk Systems (e.g. ACD, electronic workflow, problem management, self help and self heal, knowledge database, remote desktop control, procurement management, automated provisioning) necessary to document, track and manage trouble tickets and End-User service requests, inquiries and Problem notifications from inception to closure across Service Frameworks using cross functional processes	X	
16. Maintain and provide Help Desk operational policies and procedures in the Help Desk knowledge database	X	
17. Accept all incoming trouble calls and service requests via toll-free telephone number, e-mail, fax, personal digital assistant (PDA) devices, IVR, or web access and direct appropriately	X	
18. Provide a single point of contact (SPOC) for, and coordinate all End-User requests for service	X	
19. Manage and track trouble tickets and service requests that involve multiple Service Frameworks and third parties (e.g. vendors, service providers, County staff) and collaborate with third parties to resolution and closure	X	
20. Provide third parties (e.g. vendors, service providers, County staff) access to the Help Desk Systems as required to support trouble ticket resolution and service requests (e.g. change management, asset management functions) per policies and procedures	X	
21. Utilize Help Desk Systems as required to resolve trouble tickets and perform service requests (e.g. change management, asset management functions) per policies and procedures	X	
22. Provide support for inquiries on the features, functions and usage of all portfolio applications and OIPC items in use at County	X	
23. Identify, escalate, and manage all End-User requests to closure	X	
24. Support administration services such as creating, changing and deleting End-User Help Desk profiles	X	

| Help Desk Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
25. Provide Help Desk call-in access via a toll-free number	X	
26. Provide multiple alternative communications channels, including toll-free voice number, web-based request, e-mail, and fax. In the case of voice communications, any IVR system must allow for immediate exit from the system and live communication with a Help Desk agent	X	
27. Provide Self-Help and Self Heal services for End-Users that will include the following, at a minimum: ■ Password reset ■ Request management and status checking ■ Electronic bulletin board for posting of bulletins related to current service issues	X	
28. Facilitate employee End-User account administration, activation, changes and terminations, including: password/account setup and reset, remote access connectivity, e-mail accounts, End-User IDs, password resets, remote paging devices, voicemail administration, telephone lines, secure ID cards, OIPC requests, etc.	X	
29. Prioritize calls to and from those County executives and Mission Critical End-Users who have been identified by the County to Contractor	X	
30. Verify that all requests are resolved, per the End-User, prior to closure	X	
31. Diagnose problems using remote control tools and when possible implement remote corrective actions to resolve problems.	X	
32. Facilitate procurement management services including accurate and timely product procurement, from sourcing through order completion	X	
33. Track/manage/report Help Desk utilization	X	
34. Provide and maintain County escalation contact list(s)		X
35. Provide and maintain Contractor escalation contact list	X	
36. Provide and maintain Help Desk staff access to the County Directory	X	
37. Update County Directory data resulting from Help Desk services tasks	X	
38. Issue communications to provide status updates as required for planned and unplanned events	X	
39. Record and maintain an up-to-date System status message that may be selected when calling the Help Desk for assistance	X	
40. Provide End-User online access to all Work Requests	X	
41. Work with Contractor operational and technical staff, and County, to identify solutions that minimize the need to call the Help Desk (e.g., additional End-User training, self help opportunities)	X	
42. Approve solutions that minimize the need to call the Help Desk		X
43. Ensure that response to End-User requests is based on County priority and impact	X	
44. Dispatch on-site technicians as necessary	X	
45. Categorize, prioritize and log all Break-Fix Tickets (e.g., inquiries/Problems/Work Requests)	X	
46. Monitor Break-Fix Tickets and escalate per policies and procedures until resolution and End-User satisfaction	X	

Help Desk Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
47. Diagnose and troubleshoot problems at the Help Desk to resolve requests as quickly as possible	X	
48. Assist in enabling the enforcement of compliance to standards and the appropriate optimization at the desktop	X	
49. Utilize electronic workflow to coordinate and help perform End-User notifications related to IMAR requests including scheduling an appropriate, agreed time for the IMAR, to take place	X	
50. Maintain asset data and user profiles in the asset database through electronic workflow as a result from IMARs and related Cross Functional Services (e.g. change management, acquisition management, and asset management)	X	
51. Monitor and report on Help Desk statistics and trends (e.g., Work Request volumes and trends by types of End-Users) for inclusion in the County of San Diego IT Management (CIM) Dashboard and MASL reporting	X	
52. Continuously review incident data to detect trends and to help manage high-priority incidents	X	
53. Report repetitive incidents, abnormal patterns of calls, and resolution recommendations to the County	X	
54. Produce and submit proposed changes to Help Desk processes, operations and procedures as services evolve	X	
55. Review and approve proposed changes to Help Desk processes, operations and procedures		X
56. Conduct periodic quality assurance audits of Help Desk documentation for accuracy and currency	X	
57. Submit all corrected documentation for County approval	X	
58. Conduct Help Desk End-User customer satisfaction surveys on a random sample of incidents (including both open incidents and incidents closed from the previous month) via an email/web based tool.	X	
59. Provide results of Help Desk EndUser customer satisfaction surveys in the CIM Dashboard	X	

3.   APPLICATION SERVICES

3.1.   Applications Services Overview

Application Services consist of activities associated with the development of new Applications, and maintenance/support of existing Portfolio Applications. The work categories are defined as follows: unscheduled maintenance, scheduled maintenance, administration, user support, and development and integration.

Service Framework
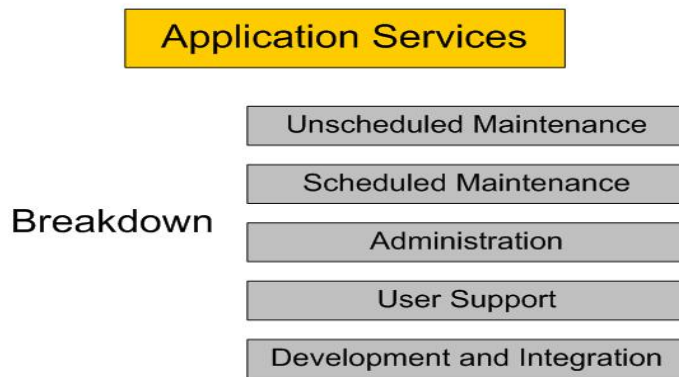
3.2. Applications Service High Level Requirements

3.2.1.   Contractor shall ensure all development and integration activities are aligned with the County IT Strategic Plan

3.2.2.   Contractor will provide technology assistance and support to the County in planning and standard-setting activities

3.2.3.   Contractor will provide services in accordance with Information Technology Infrastructure Library (ITIL) standards and in accordance with CMMI standards to ensure practices result in predictable, repeatable, and successful results

3.3. Scope of the Environment

3.3.1.   Personnel

Contractor shall be responsible for staffing to meet the Applications labor categories as described in detail in Exhibit 16.1-4 to Schedule 16.1 to the Agreement Application Services Requirements, Roles and Responsibilities. Contractor will provide Application Services using the following staffing approach:

3.3.1.1.   Onsite presence at County Locations— A listing of Contractor Personnel to reside at various County Locations will be developed and included in the final Transition Plan.

3.3.1.2.   Local San Diego Center of Excellence (CoE)—The Contractor will have a CoE in the San Diego area. The CoE will house a majority of the Applications Team, including developers, additional functional resources, and applications management specialists.

3.3.1.3.   Remote locations in the continental US—Contractor will supplement the local resources with Subject Matter Experts (SMEs) in geographies outside the County.

3.3.1.4.   Contractor will provide a pool of personnel providing applications development and support across business groups.

3.3.2.   Unscheduled Maintenance

Unscheduled Maintenance shall include the repair of defects to enable Applications in production to provide the required functionality to meet the MASLs. Examples of Unscheduled Maintenance are:

- Non-latent defect - discovered/known (before Acceptance)

- Latent defect – discovered after Acceptance

- 3rd party defect

- No defect - defect ruled out

3.3.3.   Scheduled Maintenance

Scheduled Maintenance shall include the following activities, which if not addressed proactively, could impact Applications in production, such as:

- Preventive maintenance/scheduled software updates

- Decommission/retire

- Application of System patches

- Proactive performance tuning

- Database administration

- Proactive archiving

Special testing for events, such as:

- Public holidays

- End of financial year

- End of calendar year

- Daylight savings time

3.3.4.   Administration

Administrative activities which include the following:

- User ID creation

- Table maintenance

3.3.5. User Support

User support includes ancillary activities required for the proper operation of systems. The County's strategy is to decrease investment in this category of work. Tasks include:

- Meeting Attendance

- Planning/Analysis

- End-User Training

- Explanation of System Functionality

3.3.6. Development & Integration

Development of new code and/or new functionality

- Integration and/or deployment of 3rd party software products

- Development of new database instances

- Development of interfaces

3.3.7. Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities.

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Conduct periodic technical reviews	X	
2. Perform an annual portfolio analysis to identify and recommend Applications rationalization, consolidation, sun setting, etc.		X
3. Perform application portfolio optimization studies, including developing strategies such as "ERP Optimization" and "Application Rationalization" throughout the enterprise application environment to effectively capture operational savings and deliver productivity gains for the County of San Diego	X	
4. Assist in the annual portfolio analysis processes, including providing trend, technical, defect rate and cost information	X	
5. Produce and submit Project plans that include Project timelines, cost estimates, risk analysis, quality plans, and End-User training	X	

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
6. Review Project plans that include Project timelines, cost estimates, risk analysis, quality plans, and End-User training		X
7. Produce and submit vision & scope documents (conceptual plans) to define work to be performed	X	
8. Review and approve vision & scope documents		X
9. Define, refine, and prioritize business requirements		X
10. Assist in the development and integration, analysis and documentation of business requirements	X	
11. Perform business process reengineering activities as approved by the County	X	
12. Approve business requirements documents		X
13. Conduct County interviews, group workshops and surveys to determine technical, functional and End-User requirements for planning purposes	X	
14. Analyze Application software patches and releases to determine their applicability to the County environment, the level of effort necessary to adapt them to the County environment and any changes to hardware or other software changes necessary to support the patches and releases.	X	
15. Produce and submit functional business requirements documents, logical and physical data models and other requirements documentation for planning purposes	X	
16. Conduct value assessments of functional business requirements and generate an impact analysis, including affected systems, alternative high-level design scenarios, etc.	X	
17. Approve all functional requirements		X
18. Assist the County in the identification, evaluation and documentation of alternative Applications solutions to meet the County needs	X	
19. Conduct market analysis for commercial software solutions	X	
20. Approve software upgrade conversion requirements for COTS software		X
21. Recommend Application test plans (e.g., functional, volume, end-to-end, integration, stress, regression, system, and User Acceptance Test (UAT) if applicable) for planning purposes	X	
22. Produce and submit Application test plans	X	
23. Approve Application test plans		X
24. Produce and submit plans for Application integration	X	
25. Review and approve Application integration plan		X
26. Perform Project estimation using industry tools and methods to size Application Projects	X	
27. Produce and submit communication plans for rolling out changes to End-Users	X	
28. Review and approve communication plans for rolling out changes to End-Users		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
29. Provide project management services for Applications Services projects consistent with the Contractor's standard methodology and Program Management Institute (PMI) processes.	X	
30. Produce and submit logical data model	X	
31. Approve logical data models		X
32. Produce and submit recommended technologies to support Applications	X	
33. Review and approve recommended technologies to support Applications		X
34. Conduct Site surveys for design efforts as required by requirements document	X	
35. Produce and submit detailed design documents based upon business and functional requirements and high-level design	X	
36. Review and approve detailed design documentation		X
37. Produce and submit technology designs that specify all program modules, data stores, interfaces, interface components and associated operations procedures for the Application	X	
38. Produce and submit technical requirements, logical and data models	X	
39. Review and approve technology designs, technical requirements and data models		X
40. Produce and submit test plans and test cases	X	
41. Approve test plans and test cases		X
42. Produce and submit implementation and deployment processes, Project schedules and staffing requirements to meet deployment and delivery requirements	X	
43. Review and approve implementation and deployment processes, schedules and deployment staffing levels		X
44. Produce and submit application software-related System specifications and documentation	X	
45. Produce and submit operational processing flows	X	
46. Produce and submit application software-related System installation, support, configuration and tuning manuals	X	
47. Produce and submit Application hardware and System software requirements documentation	X	
48. Produce and submit End-User manuals and other documentation	X	
49. Maintain, and provide County access to, physical and logical on-line libraries of all deliverables and documentation produced in the course of performing applications work (e.g., specifications, process flows, user manuals, operating manuals)	X	
50. Produce and submit standard operating procedures	X	
51. Produce and submit documentation for Applications on patches, updates and release notes	X	
52. Review and approve all Applications documentation submitted by the Contractor		X
53. Produce and submit a list of all Work Products to be developed during the Application build process prior to inception of the build process	X	

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
54. Review and approve the list of Work Products, including the level of review and approval for each Work Products		X
55. Establish overall programming and development and integration schedules	X	
56. Produce and submit overall programming and development and integration module delivery schedules for County Acceptance	X	
57. Approve overall programming and development and integration module delivery schedules		X
58. Perform all necessary programming, development, unit testing, scripting, configuring and customizing of Application modules as required to develop and implement the design plans and specifications	X	
59. Perform Application data base functions, including, but not limited to, development, monitoring and tuning	X	
60. Conduct and submit development and integration status reviews and provide written report on results to the County	X	
61. Conduct and submit development and integration status reviews with County and provide written report on results to the County	X	
62. Coordinate third party software vendors in the implementation of Application packages	X	
63. Integrate third party software solutions	X	
64. Assess results of Contractor development and integration reviews performed at the County's discretion		X
65. Produce and deliver prototypes	X	
66. Approve prototypes to ensure specifications are met		X
67. Produce and submit test plans, test cases, test data and perform all appropriate testing (e.g., unit testing, end-to-end testing, stress testing, regression testing)	X	
68. Approve all test plans		X
69. Produce and submit test environment and data where required by Project, including demonstration of requirements traceability to verify the requirements as specified in the requirements document have been satisfied	X	
70. Conduct and coordinate test activities	X	
71. Remediate Applications test results	X	
72. Review and approve test results		X
73. Facilitate and support User Acceptance Testing (UAT) establishing adequate test environment based on End-User Acceptance Criteria, preparing data to support test scenarios within modified System as well as managing the relationship with all interfaced Systems necessary to conduct testing, troubleshooting, supporting End-Users to progress through scenarios, employing focused test teams using test scripts to perform important integration and Acceptance testing, simulating interfaces or working with integrated Systems to conduct end-to-end tests, support batch processing, exercise functionality, and report results, as requested by the County	X	
74. Manage and support software and test data in test environments	X	

| Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
75. Ensure testing results are in compliance with policies, procedures, plans, and test criteria and metrics (e.g., defect rates, progress against schedule)	X	
76. Notify Contractor in the event the County notices a discrepancy between the County's requirements and the requirements document or Contractor deliverables		X
77. Define test-to-production turnover requirements and instructions for each Project or release	x	
78. Approve test-to-production turnover requirements and instructions		x
79. Produce and submit reports on results from test-to-production activities if applicable	x	
80. Review and approve reports on test-to-production results		x
81. Perform software support to migrate code from test to production as approved by the County	x	
82. Track migration status and notification	x	
83. Perform software support environment setup and decommissioning for new and changed environments	x	
84. Provide information on pertinent End-User policies and procedures		X
85. Provide software support for implementation and deployment of the County's Application and platform environment in all County Sites as defined in the requirements document(s) or a Work Request	X	
86. Coordinate deployment and support activities with the County's representatives as directed by the County	X	
87. Perform data migration from existing systems to new systems, by either electronic or manual methods	X	
88. Conduct post-implementation End-User Acceptance		X
89. Conduct post-implementation evaluation and review of new System implementation with County IT and End-User representatives to ensure effectiveness, usability and satisfaction	X	
90. Produce and submit Application and End-User documentation	X	
91. Produce and submit detailed "technical go-live" deployment plan	X	
92. Produce and submit "go/no-go" checklist	X	
93. Conduct the "go/no-go" meetings	X	
94. Review and approve production implementation "go/no-go" recommendation		X
95. Review and approve Application as "System of Record"		X
96. Produce and submit documentation to add to Applications Portfolio List	X	
97. Produce and submit End-User training plans	X	
98. Review and approve training plans		X
99. Produce and submit course material	X	
100. Review and approve course materials		X
101. Provide training materials	X	
102. Provide End-User training	X	

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
103. Produce and submit Help Desk scripts	X	
104. Review and approve Help Desk scripts		X
105. Produce and submit operations and administration procedures related to code migration	X	
106. Review and approve operations and administration procedures related to code migration		X
107. Conduct pre-installation site surveys, including validation of Site-specific functionality as defined in the Requirements Document(s)	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
108. Provide Application Unscheduled Maintenance	X	
109. Provide Application Scheduled Maintenance	X	
110. Provide Application User Support	X	
111. Provide Application Administration	X	
112. Deliver services using unified/consistent processes across all business groups and Applications to enhance quality, provide a common structure for service delivery and achieve maximum benefit from Application Services	X	
113. Produce and submit proposed production schedules for Applications	X	
114. Review and approve production schedules for Applications		X
115. Perform Application Software-related diagnostics	X	
116. Perform routine system management on Applications including patches and upgrades	X	
117. Produce and submit recommendations on operations and administration procedures related to code migration	X	
118. Review and approve recommended operations and administration procedures related to code migration		X
119. Maintain logical databases	X	
120. Define authorization requirements for End-Users, roles, schemas, etc. and approve change requests		X
121. Perform ad hoc database restores	X	
122. Create/refresh development/test databases from production data	X	
123. Execute database creation, configuration, upgrades, patches and refresh	X	
124. Execute all database System level changes (initialization parameters)	X	
125. Execute all schema changes for all instances	X	
126. Perform database data definition activities for Applications per County requirements	X	
127. Maintain documentation for all database instance parameters and System settings	X	
128. Execute database data definitions and requirements	X	
129. Identify and resolve locking conflicts, latch contention, rollback requirements, etc. for all database instances	X	

Application Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
130. Provide Application software-related technical assistance and subject matter expertise to County and third-party vendors.	X	
131. Provide data management support	X	
132. Produce and submit all Applications documentation	X	
133. Recommend database standards	X	
134. Implement County ad hoc reporting requirements	X	

4.   DESKTOP SERVICES

4.1.   Desktop Services Overview

This section pertains to the Desktop Services Framework. Desktop Services consist of Plan, Build, and Operate services related to computing devices and peripherals (hardware and software) handled directly by End-Users. Contractor shall provide centralized control of all Desktop Services, including Break-Fix and IMARs
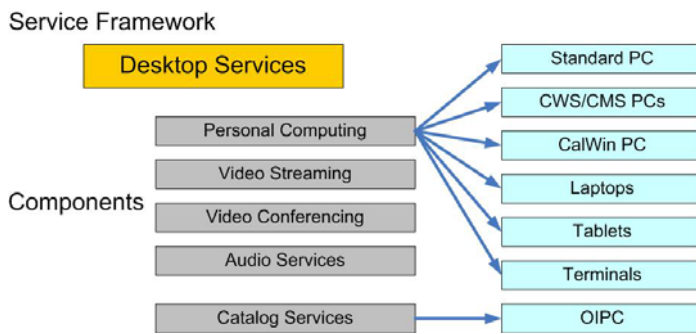
4.2.   Desktop Services High Level Requirements

The following are the key high level requirements:

4.2.1.   Contractor shall improve service and support levels

4.2.2.   Contractor will provide technology assistance and support to the County in planning and standard-setting activities

4.2.3.   Contractor shall improve End-User productivity

4.2.4.   Contractor shall standardize hardware and software to the extent possible

4.2.5.   Contractor shall improve asset management and control

4.2.6.   Contractor shall improve total cost of ownership

4.2.7.   Contractor shall support County's business initiatives

4.2.8.   Contractor shall provide IMAR services for the Desktop Services Framework

4.2.9.   Contractor shall publish all Desktop Services asset standards on the County Intranet

4.3.   Desktop Services Requirements, Roles and Responsibilities

The Contractor shall provide IMAR activities for the Desktop Services Framework. All IMAR activities require applicable updates to the Contractor's Asset Management tracking system. IMAR activities are defined as:

4.3.1.   Install

4.3.2.   Contractor shall provide Install services as follows:

- Order and deliver the Desktop Services Framework asset to the End-User workspace.

- Install the Desktop Services Framework asset, including configuration, setup, and network connection

- Perform all diagnostic testing to ensure Desktop Services Framework asset functionality

- Remove any boxes and/or packing materials

4.3.3.   Move

4.3.4.   Contractor shall perform Move services as follows:

- Provide move services from within a Location or from Location to Location, for any Desktop Services Framework asset, which includes disconnecting, moving and reconnecting asset(s)

- Perform all diagnostic testing to ensure Desktop Services asset functionality

4.3.5.   Add

4.3.6.   Contractor shall provide Add services as follows:

- Provide upgrade or add hardware or software to deployed Desktop Services Framework assets

- Provide upgrade or add features to requirements of the Work Request

- Modify current configurations to deployed Desktop Services Framework assets to meet approved standards

4.3.7. Remove

4.3.8. Contractor shall perform Remove services as follows:

- Provide Remove services for Desktop Services Framework assets that are being displaced due to Work Request, refresh or Break-Fix activity.

4.3.9. Contractor shall provide update or upgrade software services as follows:

- Use electronic tools for all networked attached desktop devices to deploy patches, applications, drivers, operating systems and any other upgrade

- For non-network connected devices the Contractor will accomplish required updates and changes by providing the device user with a CD, DVD or an email containing the update or change. The Contractor will provide the device user with written instructions to execute the update or change. Phone assistance will be provided through the Team help desk, which will dispatch onsite support for additional assistance, as required.

4.3.10. Desktop Services: Plan, Build and Operate Requirements, Roles and Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Desktop Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Desktop Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Recommend and submit hardware and software standards for Desktop Services assets	X	
2. Review and approve hardware and software standards for Desktop Services assets		X
3. Identify, recommend and submit Desktop Services solutions that best meet County's business needs and expense/service level expectations	X	
4. Review and approve Desktop Services solutions and service levels		X
5. Perform operational planning for Desktop Services capacity and performance purposes	X	

Desktop Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
6. Recommend and submit hardware and software deployment/management policies and procedures	X	
7. Review and approve hardware and software deployment/management policies and procedures		X
8. Recommend and submit hardware and software upgrades to Desktop Services assets	X	
9. Review and approve hardware and software upgrades to Desktop Services assets		X
10. Recommend and submit updates and patches plan to Desktop Services assets	X	
11. Review and approve updates and patches plan to Desktop Services assets		X
12. Update and provide to Contractor a list of County VIPs for use in MASL prioritization criteria		X
13. Recommend and submit MASL prioritization criteria based on the list of County VIPs	X	
14. Review and approve MASL prioritization criteria for County VIPs		X
15. Produce and submit preventive maintenance plans consistent with OEM practices. Plans shall include equipment model and manufacturer, frequency of PM, and specific actions to be taken such as cleaning, lubricating, adjusting, inspecting, running diagnostic tests, and replacing all parts and components defined by OEM as non-user replaceable or consumable necessary to keep the equipment functioning within the OEM specifications	X	
16. Review and approve preventive maintenance plans.		X
17. Produce and submit recommendations for "right sizing" printer to employee ratios	X	
18. Produce and submit tactical printer refresh strategy to determine the actual print need compared to the installed base	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
19. Provide all design and engineering required to deploy and support Desktop Services assets	X	
20. Produce and submit engineering documentation required to deploy and support Desktop Services assets	X	
21. Review and approve all engineering documentation required to deploy and support Desktop Services assets		X
22. Ensure Desktop Services solutions are fully integrated with the Help Desk Services Framework and asset management processes, including, but not limited to: ▪ A shared system and database ▪ Direct electronic interfaces between the Help Desk agents and field service technicians ▪ Integrated support processes involving desktop, data center, and network for remote server and telephone break-fix	X	

Desktop Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
23. Provide all test services required to support Desktop Services including providing a test laboratory that will develop and verify desktop images, as well as the support of desktop hardware and components evaluations and demonstrations	X	
24. Perform desktop software (e.g. applications, patch packages) and hardware functionality and product compatibility testing and development in the test laboratory environment using tools and procedures that are specially designed for this purpose (test to include: unit testing, system integration testing, LAN connectivity testing, load testing, and application interconnectivity testing)	X	
25. Develop and document test scripts	X	
26. Regularly monitor vendor websites and other communications for new application functionality, updates, and new software or hardware	X	
27. Build/Acquire updates and patches for Desktop Services assets	X	
28. Test updates and patches for Desktop Services assets	X	
29. Produce and submit deployment plan for updates and patches for Desktop Service assets	X	
30. Review and approve the deployment plan for updates and patches for Desktop Service assets		X
31. Produce and submit all build documentation	X	
32. Review and approve all build documentation		X
33. Produce and submit to County all test documentation	X	
34. Review and approve all test documentation		X
35. Produce and submit to County all deployment documentation for Desktop Services	X	
36. Review and approve all deployment documentation for Desktop Services		X
37. Manage deployment efforts using formal project management tools, methodologies and standards (e.g., ITIL change and configuration management practices)	X	
38. Conduct deployment reviews and provide results to County	X	
39. Review and approve results of deployment reviews		X
40. Physically connect Desktop Services assets to the applicable wall jack	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
41. Provide technical support to End-Users for Break-Fix activities	X	
42. Ensure that desktop technicians have the tools necessary to improve problem resolution time	X	
43. Provide priority support for designated County Executives/VIPs	X	
44. Utilize auto discovery asset management tools to ensure most recent version of anti-virus software is installed	X	
45.		
46. Perform routine preventive maintenance according to the County approved preventative maintenance plans	X	
47. Regularly review asset data and failure trends and develop plans to review and proactively repair the equipment	X	

Desktop Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
48. Perform predictive maintenance according to the County approved proactive repair plans	X	
49. Provide and maintain hardware and software documentation on desktops with the core or core + 1 images and provide others online through the online Web access	X	

4.4. Personal Computing Services

4.4.1. Personal Computing Services Overview

This section pertains to the Personal Computing Services component within the Desktop Services Framework. The Personal Computing Services component applies to all hardware and software needed to maintain and support Personal Computing Services assets. Personal Computing Services consist of activities associated with the Plan, Build and Operate of Standard PCs, CWS/CMS PCs, CalWin PCs, laptops, tablets, terminals and core software.

4.4.2. Personal Computing Services High Level Requirements

4.4.2.1.   Contractor shall provide standardization across the Personal Computing Services component for all hardware and software.

4.4.2.2.   Contractor provided Personal Computing Services assets will be subject to refresh cycles as specified below.

4.4.2.3.   Contractor shall maintain currency of core software deployed within the Personal Computing Services component.

4.4.3. Personal Computing Services Environment

4.4.3.1.   Scope of the Environment to be Supported

The following sub-sections further describe and scope Personal Computing Services elements to be supported by Contractor and with which Contractor shall comply.

4.4.3.2.   Hardware and Software

County Personal Computing Services assets include:

- Standard PCs

Standard PCs hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. For the first Contract Year, the standards will be those in effect with the Legacy Provider as of the date of Cutover for this Service Framework. The process to set Standard PCs hardware standards will be based on recommendations made by the Contractor and approved in writing

by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

Each Contract Year, 25% of the Standard PCs will be refreshed. The refresh will occur over the course of the Contract Year using a straight line methodology (25% of assets evenly refreshed over 12 months). Hardware and core software that meet current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of the refresh process.

- CWS/CMS PCs

The CWS/CMS PCs will comply with County core software standards. There will be no separate hardware standard setting process associated with CWS/CMS PCs. With the CWS/CMS PCs being Retained Assets, there will be no requirement for hardware refresh for this class of Personal Computing Services assets. The CWS/CMS PCs will be fully maintained and supported by the Contractor.

- CalWin PCs

The CalWin PCs will comply with County core software standards. There will be no separate hardware standard setting process associated with CalWin PCs. With the CalWin PCs being Retained Assets, there will be no requirement for hardware refresh for this class of Personal Computing Services assets. The CalWin PCs will be fully maintained and supported by the Contractor.

- Laptops

Laptop hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. For the first Contract Year, the standards will be those in effect with the Legacy Provider as of the date of Cutover for this Service Framework. The process to set Laptop hardware standards will be based on recommendations made by the Contractor and approved in writing by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

Each Contract Year, 1/3 of the Laptop assets will be refreshed. The refresh will occur over the course of the Contract Year using a straight line methodology (1/3 of assets evenly refreshed over 12 months). Hardware and core software that meet current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of refresh process.

- Tablets

Tablet hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. For the first Contract Year, the standards will be those in effect with the Legacy Provider as of the date of Cutover for this Service Framework. The process to set Tablet hardware standards will be based on recommendations made by the Contractor and approved in writing by the County.

Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

Each Contract Year, 1/3 of the Tablet assets will be refreshed. The refresh will occur over the course of the Contract Year using a straight line methodology (1/3 of assets evenly refreshed over 12 months). Hardware and core software that meet current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of refresh process.

- Terminals

Terminal hardware standards and refresh are not applicable.

- Core Software

Core software revisions will be reviewed annually by the County at least 60 days prior to start of new Contract Year and updates will go into effect at the start of each Contract Year.   For the first Contract Year, the standards will be those in effect with the Legacy Provider as of the date of Cutover for this Service Framework.   All assets in the Personal Computing Services Framework will maintain the same version of the core software throughout the given Contract Year. If updates are adopted, these updates will be placed onto all Personal Computing Services assets within a time frame set by County and agreed to by Contractor. At the County's request, Contractor shall recommend updates to the core software standards, for County's review and approval. Criteria for selection of a particular software package version upgrade will include that the software package has been field proven, necessary to the County for uninterrupted service to its customers, and poses no significant application remediation risks. The Contractor shall maintain the Core Software to within one version of the most current release (N-1). Any additions or deletions to the Core Software will be indicated in the Standards and Procedures Manual.

The Core Software currently includes:

- Microsoft Windows XP

- Microsoft Office 2003

- Microsoft Publisher

    – Antivirus software

    – WinZip

    – Adobe Reader 7.x

    – Internet Explorer 6.x

    – Microsoft Windows Media Player

–　　Macromedia Shockwave/Flash Player

Attachmate Extra Personal Client

Roxio CD Creator Basic

4.4.4.　　Personal Computing Services Requirements, Roles and Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Personal Computing Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Personal Computing Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Recommend and submit Personal Computing assets hardware standards on a yearly basis	X	
2. Review and approve Personal Computing assets hardware standards		X
3. Recommend and submit core software standards for Personal Computing assets	X	
4. Review and approve core software standards for Personal Computing assets		X
5. Recommend and submit core software deployment/management policies and procedures	X	
6. Review and approve core software deployment/management policies and procedures		X
7. Produce and submit yearly Personal Computing asset refresh plan	X	
8. Review and approve yearly Personal Computing asset refresh plan		X
9. Recommend and submit Personal Computing software deployment/management policies and procedures	X	
10. Review and approve Personal Computing software deployment/ management policies and procedures		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
11. Develop core software image for Personal Computing assets based on approved standards	X	
12. Test standard core software image for Personal Computing assets prior to deployment based on approved standards	X	
13. Review results of test and approve deployment for the core software image for Personal Computing assets		X
14. Deploy approved Personal Computing core software image.	X	
15. Provide staging services for Personal Computing assets at non-County Locations	X	

Personal Computing Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
16. Deploy and manage desktop and laptop hardware and software (e.g., operating system, personal productivity and office automation software and services)	X	
17. Deploy software (e.g. patches, applications, drivers and operating systems) using a Contractor provided electronic software distribution tool	X	
18. Provide a rapid response team during software deployment for assisting affected End-Users in the event a deployed package adversely affects End-Users or any systems.	X	
19. Deploy, manage, communicate and report activities related to Personal Computing refresh	X	
20. Review and approve reports for Personal Computing refresh		X
21. Develop and provide training related to the implementation of new products and services	X	
22. Engineer the core software image and provide any and all version changes, upgrades, enhancements, and additions to the core software image, to ensure that the core software image will function properly on the desktop and the Applications Portfolio	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
23. Provide support, including break-fix, for all Personal Computing assets.	X	
24. Provide IMAR services	X	
25. Conduct data, End-User profile (e.g., favorites, bookmarks, MS Outlook profile) and Application migration that is necessary due to any Personal Computing refresh, IMAR or Break-Fix activity.	X	
26. Provide support for Personal Computing assets refresh	X	
27. Purchase, manage, and provide Personal Computing consumables (e.g., floppies, CDs) to the County's employees		X
28. Purchase, manage, and provide Personal Computing consumables (e.g., floppies, CDs) to the employees of Contractor	X	
29. Provide core software updates, OIPC software installation and new software releases for Personal Computing assets	X	
30. Provide each End-User orientation on operational concepts of the new Personal Computing asset at time of deployment	X	
31. Provide and submit End-User tip sheets on such items as log on procedures, networked drives, system usage, core software, data storage and other practices that are essential to daily tasks	X	
32. Review and approve End-User tip sheets prior to deployment		X
33. Continually utilize automated asset management tools to identify unlicensed software on desktops and servers and to pinpoint desktop devices not running the most recent anti-virus software stipulated County standards and policies	X	
34. Provide software license and anti-virus software compliance reports to the County's project manager and work to correct any non-compliance	X	

4.5. Video Streaming Services

4.5.1. Video Streaming Services Overview

This section pertains to the Video Streaming Services component within the Desktop Services Framework. The Video Streaming Services component consists of the process of providing video data or content via a web page to the County Intranet or the external public. Video Streaming Services consist of activities associated with the Plan, Build and Operate of the video streaming service.

4.5.2. Video Streaming Services High Level Requirements

4.5.2.1. Contractor shall provide and maintain video streaming broadcast, at a minimum, of Board of Supervisors meetings and weddings, over the Internet to worldwide audiences and to the County Intranet.

4.5.2.2. Contractor shall deliver and distribute video streaming broadcasts in the most efficient means to deliver high quality video to all End-Users.

4.5.2.3. Contractor shall provide and maintain video streaming capabilities across the County network.

4.5.3. Video Streaming Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Video Streaming Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Video Streaming Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Provide support, including Break-Fix, for Video Streaming Services	X	
2. Provide and maintain internet video and audio streaming broadcasts, including broadcasts of Board of Supervisors meetings and weddings by County Clerk	X	
3. Provide broadcast feed of County of San Diego Board of Supervisors meetings to the Cox (or the applicable successor) cable television distribution network	X	

4.6. Video Conferencing Services

4.6.1. Video Conferencing Services Overview

Video Conferencing Services consist of the activities and functions of providing two-way video transmission between different entities. These services include

call set-up, call co-ordination, full motion display of events and participants in a bi-directional manner, support for the management of directing the cameras, ranging from fixed position, to sender directed, to receiver directed, to automated sound pickup.

4.6.2. Video Conferencing Services High Level Requirements

4.6.2.1. Video Conferencing hardware and setup, including network connections, will be purchased via the OIPC

4.6.2.2. Contractor shall provide comprehensive Video Conferencing Services including all equipment to County departments.

4.6.2.3. Contractor shall provide point-to-point, meet-me multipoint and scheduled multipoint room configuration Video Conferencing Services.

4.6.3. Video Conferencing Services Environment

4.6.3.1. Scope of the Environment to be Supported

The following sub-sections further describe and scope Video Conferencing Services elements to be supported by Contractor and with which Contractor shall comply.

4.6.3.2. Hardware and Software

The County uses H.320 and H.323 reference based video conferencing devices. Video conferencing devices connect directly to the PBX, PSTN or use private ISDN T1 lines and are configured for point to point or multipoint sessions.

The hardware and setup will be purchased via the OIPC. As a purchased, OIPC item, the hardware will not be subject to refresh.

4.6.4. Video Conferencing Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Video Conferencing Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Video Conferencing Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit plans for new, replacement and upgrades to Video Conferencing Services	X	
2. Review and approve plans for new, replacement and upgrades to Video Conferencing Services		X

Video Conferencing Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
3. Design and implement new, replacement or upgrades to Video Conferencing Services	X	
4. Review and approve design changes and implementation plans to Video Conferencing Services		X
5. Test and deploy approved changes to Video Conferencing Services	X	
6. Develop and provide training related to the implementation of new products and services	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
7. Provide support, including Break-Fix, for Video Conferencing Services	X	
8. Provide IMAR services	X	
9. Provide and support infrastructure services for point-to-point and multipoint video conferencing	X	
10. Support existing Video Conferencing assets	X	

4.7. Audio/Video Services

4.7.1. Audio/Video Services Overview

Audio/Video Services consist of activities, equipment and services associated with the Plan, Build and Operate functions regarding Audio and Video assets including wiring and cabling. The County will request Audio/Video Services, when needed, via a Work Request.

4.7.2. Audio/Video Services High Level Requirements

4.7.2.1. Provide support for the existing Audio Services and upgrades upon request

4.7.2.2. Provide support for the existing Cable television cable plant and perform upgrades upon request

4.7.3. Audio/Video Services Requirements, Roles & Responsibilities

All requests for service will be handled via a Work Request.

4.8. Catalog Services

4.8.1. Catalog Services Overview

4.8.1.1. Catalog Services consist of activities associated with the Plan, Build and Operate of the Optional Item Pricing Catalog (OIPC)

4.8.1.2. The OIPC contains the hardware and software items that are approved for use within the County Desktop Services environment

4.8.1.3.   The OIPC will include hardware such as Blackberries, single or multi-line Telephones, printers, monitors, keyboards and Video Conferencing equipment.

4.8.1.4.   The OIPC contains the Desktop Applications Directory (DAD) that has been authorized for use within the County computing environment. DAD packages will be fully maintained by the Contractor which includes, but is not limited to, acquisition of the software, management of software licenses, engineering of the software, deployment of the software, and rights management to the software. The OIPC DAD will be managed by the County and will include adding, deleting or updating approved Applications on the list. Contractor shall update and publish on a monthly basis the OPIC on the County Intranet.

4.8.2.   Catalog Services High Level Requirements

4.8.2.1.   Maintain currency of items in the OIPC

4.8.2.2.   The OIPC will be hosted and made available to County users on a proven table-driven catalog management system

4.8.2.3.   Organize the OIPC to facilitate ordering and viewing for End-Users

4.8.2.4.   Publish the OIPC on an on-line County Portal, with online help functions, for viewing and ordering

4.8.3.   Catalog Services Requirements, Roles and Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Catalog Service: Plan, Build and Operate Requirements, Roles and Responsibilities

Catalog Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Define, add, modify and delete hardware and software items in Optional Item Pricing Catalog (OIPC)		X
2. Produce and submit recommendations for updates to hardware and software items in the OIPC	X	
3. Review and approve updates to hardware and software items in the OIPC		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
4. Provide all engineering necessary to ensure functionality of all hardware and software items in the OIPC with Personal Computing assets	X	
5. Test all new and updated hardware and software items listed in the OIPC prior to deployment	X	

Catalog Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
6. Develop and submit a deployment plan for any multi-End-User OIPC implementations	X	
7. Review and approve deployment plan for any multi-End-User OIPC implementations		X
8. Publish all new and updated items in the OIPC at the conclusion of the engineering activity	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
9. Authorize items to be included in OIPC		X
10. Add or modify the DAD listed in the OIPC via a Work Request	X	
11. Maintain and support, including Break-Fix, all software and hardware in the OIPC	X	
12. Provide IMAR services for OIPC items	X	
13. Maintain and publish on a monthly basis the OIPC	X	
14. Provide web access and ordering capabilities for the OIPC to all County End-Users	X	
15. Provide on-going OIPC user training	X	
16. Provide End-User orientation on operational concepts of new hardware or software installed via order from the OIPC	X	
17. Produce and submit IT training processes and procedures	X	
18. Review and approve IT training processes and procedures		X
19. Produce and submit recommendations for IT training courses	X	
20. Review and approve IT training courses		X
21. Design and deliver IT training courses as requested by a Work Request	X	
22. Provide IT training courses as requested	X	
23. Review new manufacturers' product posted offerings, verify the currency of the listed equipment, and maintain the accuracy of the OIPC	X	

5.   NETWORK SERVICES

5.1.   Network Services Overview

Network Services include the assets and services associated with the electronic transport of data across the County infrastructure, and/or external third parties. The point of demarcation for Network Services with both Desktop Services and Data Center Services is the wall jack.

Network Services are comprised of the following components: Data Network; Remote Access; Voice Services; and Security. Activities included are the Plan, Build, and Operate of networked systems used for the transmission of information in voice, data, and/or video formats.

Service Framework
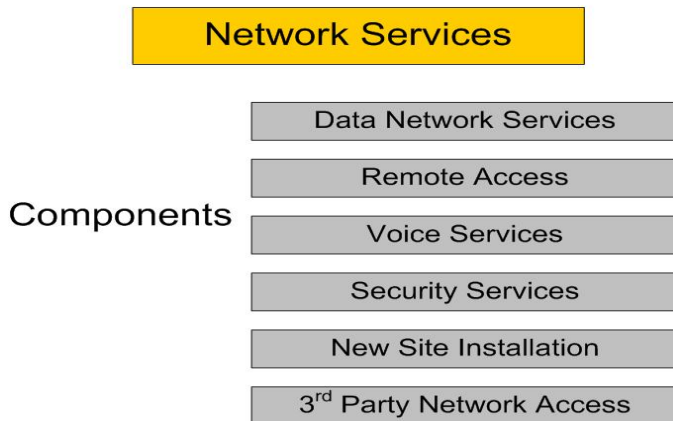
5.2. Network Services High Level Requirements

5.2.1.   Contractor shall provide a reliable, scalable, responsive and secure data communications network with connectivity to all Locations

5.2.2.   Contractor shall meet County's business needs for highly available, scalable, reliable, and secure voice communication services with features and functions that meet County business requirements

5.2.3.   Contractor shall provide a core network architecture that is comprised of secure QoS managed Multi-Protocol Label Switching (MPLS) technology

5.2.4.   Contractor shall implement a dedicated, secure, optical GigaMAN backbone

5.2.5.   Contractor will provide technology assistance and support to the County in planning and standard-setting activities

5.2.6.   Contractor shall maintain a secure network perimeter

5.2.7.   Contractor shall provide secure network remote access to County users and authorized third parties

5.2.8.   Contractor shall provide secure, reliable broadband internet connectivity that meets the County's bandwidth requirements

5.2.9.   Contractor shall incorporate technology security improvements for business requirements without compromising the security, integrity, and performance of the County enterprise and its information resources

5.2.10.   Contractor shall refresh and consolidate network assets to ensure operability and supportability

5.2.11.   Contractor shall perform centralized management of network assets

5.2.12.   Contractor shall provide additional network bandwidth as needed to meet County performance requirements, at no additional cost to the County

5.2.13.   Ensure Sites have sufficient bandwidth to perform normal business functions

5.2.14.   Ensure all network attached assets are operating at optimal and maximum performance

5.2.15.   Ensure that all network assets related to network security are physically located in secure facilities off County premises, unless otherwise approved by the County

5.2.16.   Interconnect all Sites to facilitate end-to-end business functions and allow network access to Shared Resources

5.2.17.   Continuously manage and improve the network to meet the demands of the End-User and County business requirements including providing network bandwidth and technology upgrades as required.

5.2.18.   Continuously investigate technology that improves the overall network efficiencies, lowers overall network costs and improves End-User network satisfaction

5.2.19.   Develop and implement a migration plan that spans the life of the Agreement and describes the future and current bandwidth requirements and maintains currency in network assets

5.3.   Network Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Collaborate with third party network carriers and vendors, and other industry leaders, on an initial and ongoing basis to develop and establish the most favorable, cost-effective strategic direction for voice technology for the County	X	
2. Produce and submit network architecture documentation	X	
3. Review and approve network architecture documentation		X
4. Produce and submit network asset refresh plan	X	
5. Review and approve network asset refresh plan		X

Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
6. Produce and submit capacity and trending analysis for network infrastructure	X	
7. Review and approve capacity and trending analysis for network infrastructure		X
8. Produce and submit impact analyses and associated plans	X	
9. Review and approve impact analyses and associated plans		X
10. Produce and submit standards for network cable plant to include wiring standards, fiber standards, terminations, face plates, cable run, cable type.	X	
11. Review and approve standards for network cable plant to include wiring standards, fiber standards, terminations, face plates, cable run, cable type.		X
12. Produce and submit recommendations on maintaining the network cable plant to industry standard	X	
13. Review and approve recommendation on maintaining the network cable plant to industry standard		X
14. Produce and submit plans for Site additions or deletions upon request	X	
15. Review and approve plans for Site additions or deletions upon request		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
16. Design and implement network Architecture based on approved documentation	X	
17. Design, configure, deploy and report network assets based on the approved refresh plan	X	
18. Review and approve network asset refresh plan		X
19. Design and implement changes to the network infrastructure based on results of the capacity and trending analysis	X	
20. Design and implement changes to the network infrastructure based on impact analyses and associated plans	X	
21. Design and implement approved recommendations on maintaining the network cable plant to industry standard	X	
22. Implement network cable plant standards	X	
23. Design and implement network devices to meet County availability requirements (e.g. ensure that critical servers such as Domain Naming System (DNS), Dynamic Host Configuration Protocol (DHCP), Active Directory, e-mail, etc. have dual-attached network interface cards (NICs) to independent LAN switches and/or have back-up servers)	X	
24. Design and implement Site additions or deletions	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
24. Provide maintenance and support for all Network Services, including the cable plant, network hardware and circuits	X	
25. Perform proactive 24x7x365 network monitoring and maintenance functions for all framework components (e.g. voice systems, video systems, and data network transport) from County approved network operations centers (NOC)	X	
26. Provide centralized management of Network Services operations including Security	X	

Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
27. Provide local (San Diego) 24x7x365 engineering technical support	X	
28. Implement and operate network management tools that automatically generate Help Desk trouble tickets in the event of network device failure	X	
29. Measure and benchmark the County's server-to-desktop network performance using network performance tools	X	
30. Model and evaluate the effect that an introduction of a new application will have on the communications infrastructure and identify, quantify, and accommodate bandwidth requirements before production deployment of the application takes place	X	
31. Support and manage network cable plant to approved standards	X	
32. Provide updates to network Standards documentation as required	X	
33. Support site additions or deletions as requested	X	
34. Synchronize all network device time clocks using appropriate tools that meets county requirements (e.g. Network Time Protocol (NTP))	X	
35. Backup network device configurations	X	

5.4. Data Network Services

5.4.1. Data Network Services Overview

This section pertains to the Data Network Services component within the Network Services. The Data Network Services component applies to the physical network which encompasses the transmission (not processing) of information in various formats. Services provided within this component include, but are not limited to, network management, network capacity and performance monitoring, site to site connectivity, user to network connectivity, network engineering, Internet access and network refresh.

5.4.2. Data Network Services High Level Requirements

5.4.2.1. Contractor shall maintain currency on Data Network Services assets (Data Equipment)

5.4.2.2. Contractor shall propose a migration plan to update Data Network Services assets. The migration plan should update the Data Network Services assets to supportable, current technology. The plan should be executed over a period of time, proposed by the Contractor, and should be a gradual, low-risk evolutionary process.

5.4.2.3. Contractor shall refresh Data Network assets on a 5 year refresh schedule, 20% per year, unless otherwise agreed to by the County in writing, and at a County-approved deployment schedule that will minimize disruption and reduce risk. Refreshes of Data Network assets may include upgrades of active/intelligent components that provide significant upgrades in functionality and performance, if approved by the County (e.g., supervisor module in data network switch – a chassis upgrade may not be necessary).

5.4.3. Data Network Services — Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Data Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Data Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendation for Data Network Services architecture	X	
2. Review and approve recommendations for Data Network Services architecture		X
3. Produce and submit Data Network Services migration plan	X	
4. Review and approve Data Network Services migration plan		X
5. Produce and submit Data Network Services refresh plan on a yearly basis	X	
6. Review and approve Data Network Services refresh plan on a yearly basis		X
7. Identify, recommend and submit Data Network Services solutions that best meet County business needs and expense/service–level expectations	X	
8. Review and approve Data Network Services solutions and service levels		X
9. Perform and submit recommendations for Data Network Services capacity and performance policies and procedures	X	
10. Review and approve recommendations for Data Network Services capacity and performance policies and procedures		X
11. Produce and submit recommendations for Data Network Services migration to current technology	X	
12. Review and approve recommendations for Data Network Services migration to current technology		X
13. Produce and submit operational policies and procedures for monitoring and maintaining Data Network Services	X	
14. Review and approve operational policies and procedures for monitoring and maintaining Data Network Services		X
15. Produce and submit network provisioning policies and procedures	X	
16. Review and approve network provisioning policies and procedures		X
17. Produce and submit network administration policies and procedures	X	
18. Review and approve network administration policies and procedures		X
19. Produce and submit documentation of Data Network Services asset configuration files and IP addressing schemas	X	
20. Review and approve documentation of Data Network Services asset configuration files and IP addressing schemas		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
21. Produce and submit to County all design and engineering documentation to support Data Network Services	X	
22. Review and approve all design and engineering documentation for Data Network Services		X

Data Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
23. Design, test and implement approved Data Network Services architecture	X	
24. Implement approve Data Network Services migration plan	X	
25. Deploy, manage, communicate and report on activities related to Data Network Services refresh	X	
26. Review and approve Data Network refresh report		X
27. Design and Implement Data Network Services capacity and performance policies and procedures	X	
28. Design, test and implement Data Network Services migration to current technology	X	
29. Implement operational policies and procedures for monitoring and maintaining Data Network Services	X	
30. Design and implement network provisioning policies and procedures	X	
31. Implement approved recommendations for Sites additions or deletions	X	
32. Implement approved network administration policies and procedures	X	
33. Order and expedite WAN circuits, assets and services	X	
34. Configure Data Network assets prior to installation	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
35. Provide support, including Break-Fix, for all Data Network Services assets	X	
36. Manage public carriers and other circuit providers to ensure delivery of WAN services	X	
37. Monitor Data Network Services to established baseline and thresholds	X	
38. Provide and support Data Network Services refresh	X	
39. Manage and support SNA network and assets	X	
40. Provide and support Data Network Services migration to new technology or architecture	X	
41. Produce and submit Data Network Services utilization, capacity and performance reports monthly	X	
42. Provide LAN/WAN connectivity to Locations and external entities	X	
43. Manage and support provisioning of new and upgraded Data Network Services assets	X	
44. Procure, provision and maintain all network components and circuits	X	
45. Provide support in accordance with approved network administration policies and procedures	X	
46. Perform day-to-day network operations and administration activities	X	
47. Maintain TCP/IP addressing schemes, router configurations, routing tables, VPN configurations, network addresses, MAC addresses, etc.	X	
48. Support legacy data networks and associated terminals, controllers and CSU/DSU, tied to current mainframe and midrange platforms	X	
49. Manage LAN infrastructure, including wiring, patch panels, jack configuration and documentation	X	
50. Implement measures for proactive monitoring and self-healing capabilities to limit network Break-Fix incidents	X	

Data Network Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
51. Identify network Problems and Resolve in accordance with Break-Fix and Problem management services, polices, procedures and MASLs	X	
52. Perform and support physical (e.g., equipment) and logical (e.g., IP address change) IMAR associated with Sites for LAN/WAN and transport environments	X	
53. Manage the performance of public carriers (and other third parties) to meet defined schedules, Project plans, and performance	X	
54. Coordinate ordering, procurement and inventory management of network circuits from public carriers	X	

5.5.   Remote Access Services

5.5.1.   Remote Access Services Overview

This section pertains to the Remote Access Services component within the Network Services. The Remote Access Services component applies to providing connection to internal County networked assets from outside the County network perimeters specifically for authorized End-Users. Services provided within this component include, but are not limited to, VPN, Remote Access accounts, and dial-up access.

5.5.2.   Remote Access Services High Level Requirements

5.5.2.1.   Maintain a safe and secure session that allows authorized external and County End-Users access to designated County network resources

5.5.2.2.   Contractor shall refresh Remote Access Services assets on a 5 year refresh schedule, 20% per year, unless otherwise agreed by the County in writing, and at a County-approved deployment schedule that will minimize disruption and reduce risk.   Refreshes of Remote Access Services assets may include upgrades of active/intelligent components that provide significant upgrades in functionality and performance, if approved by the County.

5.5.3.   Remote   Access   Services   —   Requirements,   Roles   & Responsibilities

The   following   table   identifies   the   requirements,   roles   and responsibilities associated with Plan, Build and Operate services.

Remote   Access   Service: Plan,   Build   and   Operate   Requirements, Roles and Responsibilities

Remote Access Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	Contractor	County
1. Produce and submit recommendations for a consolidated Remote Access Services architecture	X	

Remote Access Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
2. Review and approve recommendations for Remote Access Services architecture		X
3. Produce and submit operational policies and procedures for Remote Access Services	X	
4. Review and approve operational policies and procedures for Remote Access Services		X
5. Produce and submit plans for updates and patches to Remote Access assets	X	
6. Review and approve plans for updates and patches to Remote Access assets		X
7. Build Requirements, Roles and Responsibilities	Contractor	County
8. Design, test and implement approved Remote Access Services	X	
9. Design and implement approved operational policies and procedures for Remote Access Services	X	
10. Design, test and implement approved plans for updates and patches to Remote Access assets	X	
11. Operate Requirements, Roles and Responsibilities	Contractor	County
12. Provide support, including break-fix, for all Remote Access Services assets	X	
13. Maintain, support and report on Remote Access Services	X	
14. Review and approve report on Remote Access Services		X
15. Maintain and support County Locations requiring Remote Access Services	X	
16. Maintain and support approved operational policies and procedures	X	

5.6. Voice Services

5.6.1. Voice Services Overview

This section pertains to the Voice Services component within the Network Services. The Voice Services component applies to hardware, software and circuits needed to operate the telecommunications within the County. Services provided within this component include, but are not limited to, single and multi-line voice services, local dial plans, long distance plans, voice mail, Integrated Voice Response (IVR), Auto Attendants, Automated Call Distribution (ACD), analog jacks and 4-1-1 operator services.

5.6.2. Voice Services High Level Requirements

5.6.2.1. Interconnect all Locations along a common voice network to facilitate end-to-end business functions, reduce toll calls and lower costs

5.6.2.2. Contractor shall refresh Voice Services assets on a 5 year refresh schedule, 20% per year, unless otherwise agreed by the County in writing, and at a County-approved deployment schedule that will minimize disruption and reduce risk. Refreshes of Voice Services assets may include upgrades of active/intelligent components that provide significant upgrades in functionality and performance, if approved by the County (e.g., PBX network cards – a chassis upgrade may not be necessary)

5.6.3. Voice Services Environment

5.6.3.1. Scope of the Environment to be Supported

The following further describe and scope Voice Services elements to be supported by Contractor and with which Contractor shall comply.

- Single-Line Voice Services

Single-Line Voice Services are the all the hardware, software and services necessary to provide single-line phone services to End-Users.

- Multi-Line Voice Services

Multi-Line Voice Services are the all the hardware, software and services necessary to provide multi-line phone services to End-Users.

- Voice Mail

Voice Mail is an option that can be added to Voices Services upon End-User request or a stand-alone option available to End-Users without a phone.

- Analog Jack

The Analog Jack will be used to connect such hardware items as modems, or fax machines.

5.6.4. Voice Services — Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities

Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendations for Voice Services solutions that best meets County business requirements	X	
2. Review and approve recommended Voice Services solutions that best meet County business requirements		X
3. Produce and submit operational plans for Voice Services capacity and performance management	X	
4. Review and approve operational plans for Voice Services capacity and performance policies and procedures		X
5. Produce and submit recommendations for Voice Services architecture	X	

Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
6. Review and approve recommendations for Voice Services architecture		X
7. Produce and submit Voice Services refresh plan on a yearly basis	X	
8. Review and approve Voice Services refresh plan on a yearly basis		X
9. Produce and submit recommendations for Voice Services migration to current technology	X	
10. Review and approve recommendations for Voice Services migration to current technology		X
11. Produce and submit operational policies and procedures for management and support of Voice Services	X	
12. Review and approve operational policies and procedures for management and support of Voice Services		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
13. Design, test and implement approved Voice Services solutions that best meet County business requirements	X	
14. Provide least cost routing (LCR) analysis and PBX technology that provides LCR (e.g. "tail end-hop off" LCR methodology)	X	
15. Implement approved operational plans for Voice Services capacity and performance management	X	
16. Design, test and implement Voice Services architecture		X
17. Deploy, manage, communicate and report on activities related to Voice Services refresh	X	
18. Review and approve Voice refresh report		X
19. Design, test and implement Voice Services migration to current technology	X	
20. Implement approved operational policies and procedures for management and support of Voice Services	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
21. Provide support, including Break-Fix, for all Voice Services assets	X	
22. Perform bandwidth management for Voice Services	X	
23. Support Voice Services refresh	X	
24. Support Voice network optimization and traffic engineering	X	
25. Provide competitive and economically favorable local and long distance rates	X	
26. Manage end-to-end internal and external phone connectivity including hardware and/or peripherals	X	
27. Manage the PBX systems to selectively eliminate central office caller ID call blocking, according to the authorized County personnel	X	
28. Manage PBX systems for class of service according to the authorized County key personnel	X	
29. Manage the PBX systems to provide least-cost routing and tail end hop off for outbound calls	X	
30. Manage interfaces between PBX network and public carriers	X	
31. Manage and support ACD/IVR systems	X	

Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
32. Provide emergency 911 services to County phones	X	
33. Provide adaptive voice telecommunications services and equipment as required by laws affecting the support of the disabled	X	
34. Manage and maintain private dial plan. An integrated numbering plan consistent with the County's current dialing capabilities will be provided.	X	
35. Provide local and long distance voice services	X	
36. Support and manage long distance telephone calling	X	
37. Provide local and long distance usage monitoring and reporting	X	
38. Provide and support analog jacks for equipment such as modems, fax machines, or phones	X	
39. Provide Voicemail services	X	
40. Manage Voicemail security PBXs, voicemail systems, and other Voice Services assets	X	
41. Provide Voicemail usage monitoring and reporting	X	
42. Provide Voicemail storage capacity management	X	
43. Provide Voicemail retention management per County requirements and external regulations	X	
44. Perform Voicemail mailbox IMARs	X	
45. Maintain Voicemail mailboxes configurations by End-User	X	
46. Provide new Voicemail End-User training materials	X	
47. Provide directory services to the public through a mix of automated and live operators in order to meet call requirements	X	
48. Provide a secure and searchable online directory service with real time updates (e.g., global directory facility-GDF)	X	
49. Provide 4-1-1 operator services for the County which includes a directory of employees, employee locations, departments and telephone numbers	X	
50. Maintain a directory of County services for 4-1-1 operator services	X	
51. Provide 4-1-1 operator services for employee and public inquiries	X	
52. Update annually telephone numbers with SBC or successor Government pages	X	
53. Maintain and update an employee directory website with data from County Systems	X	
54. Maintain business process, systems, and information for phone book and directory assistance in accordance with County approved system design and business processes	X	
55. Provide teleconferencing services	X	
56. Provide on-demand and prescheduled teleconferences	X	
57. Provide proactive and reactive Voice Services fraud and security management and reporting	X	
58. Monitor and record all data, such as call rating tables, call usage detail and Move, Add, and Remove orders, generate cost allocation reports for local and long distance usage as well as completed Move, Add and Remove orders	X	

Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
59. Provide itemized call detail records, including length of each call by telephone number and charge	X	
60. Provide, maintain and support toll-free (on-net) calls between all County Locations	X	
61. Provide Casual Use Calling including collect calls, person-to-person calls, person-to-person collect calls, remote calls, operator assistance calls, 3rd party calls, dial one calls, dedicated calls and other miscellaneous calls	X	
62. Provide Conference Bridge Calls for calls placed to an audio and Web document sharing conference services that allow multiple people participation and is controlled by a unique access code.	X	
63. Provide Directory Assistance Calls for calls placed to obtain a listed telephone directory number	X	
64. Provide Pay Phones located at County facilities for the public's convenience, which are required by statute.	X	

5.7. Security Services

5.7.1. Security Services Overview

The Security Services component of Network Services includes the hardware, software, and services provided to maintain network security, including:

5.7.1.1. Protection from unauthorized devices, software or users

5.7.1.2. Protection from unauthorized access to, or use of, the network and networked assets

5.7.1.3. Firewall services

5.7.1.4. Intrusion detection and reporting

5.7.1.5. Security monitoring

5.7.1.6. Security architecture services

5.7.1.7. Data protection

5.7.1.8. Prevention of malicious code entry into the network.

5.7.2. Security Services High Level Requirements

5.7.2.1. Develop and maintain a flexible security architecture

5.7.2.2. Provide protection from unauthorized use of, or access to, the County's network and networked assets

5.7.2.3.   Protect all data residing on the network from intrusion, destruction or compromise

5.7.2.4.   Contractor shall refresh Security Services assets on a 5 year refresh schedule, 20% per year, and at a County-approved deployment schedule that will minimize disruption and reduce risk. Refreshes of Security Services assets may include upgrades of active/intelligent components that provide significant upgrades in functionality and performance, if approved by the County

5.7.3.   Security Services Environment

5.7.3.1.   Scope of the Environment to be Supported

The following further describes and scope of Security Services elements to be supported by Contractor and with which Contractor shall comply.

- Intra-County and Public Network Access Security Services

This includes all the Security Services associated with network usage and services for County end-users and the public, including Security Services for:

- County data jacks

- County voice jacks

- Remote access

- Access to and from the County network through the Internet

5.7.4.   Security Services — Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Security Service: Plan, Build and Operate Requirements, Roles and Responsibilities

Security Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	Contractor	County
1. Produce and submit recommendations for Security architecture	X	
2. Review and approve recommendations for Security architecture		X
3. Produce and submit plans for monitoring and managing access to the County Intranet	X	

Security Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
4. Review and approve plans for monitoring and managing access to the County Intranet		X
5. Produce and submit plans that provide security to physical and logical devices connected to the network	X	
6. Review and approve plans to include the provision and support of methods that provide security to physical and logical devices connected to the network		X
7. Produce and submit recommendations on firewall policies that comply with County policy	X	
8. Review, approve and identify firewall policies that comply with County policy		X
9. Produce and submit recommendation of Security Services assets refresh or upgrade plan on a yearly basis	X	
10. Review and approve recommendations on Security Services assets refresh or upgrade plan		X
11. Produce and submit recommendations for improved network security	X	
12. Review and approve recommendations for improved network security		X
13. Produce and submit recommendation of policies for security vulnerability & penetration testing	X	
14. Review and approve policies for security vulnerability & penetration testing		X
15. Produce and submit plans for Security Services asset updates or patches	X	
16. Review and approve plans for Security Services asset updates or patches		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
17. Design, test and implement approved Security architecture	X	
18. Design and implement monitoring and managing access plans as approved	X	
19. Design, test and implement plans to secure network attached devices	X	
20. Design, test and implement approved firewall policies	X	
21. Design, test, implement and report Security Services assets refresh or upgrade	X	
22. Review and approve reports for Security Services assets refresh or upgrade		
23. Design and implement approved recommendations for improving network security	X	
24. Design and implement approved policies for security vulnerability & penetration testing	X	
25. Design, test and implement updates or patches approved for Security Services assets	X	

Security Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
26. Enable technologies that use a centralized authentication database for remote County employees, contractors and agents using VPN and will deploy new systems capable of interfacing with single-sign-on authentication services	X	
27. Deploy a Security Information Management System (SIMS) for aggregation and centralization of incident alerts and correlation and provide SIMS information to the County through online access	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
28. Provide support, including break-fix, for all Security Services assets	X	
29. Provide 24x7x365 security monitoring services including a Security Operations Center (SOC), IDS/IPS infrastructure and intranet/Internet firewalls	X	
30. Provide Services in conformance to firewall policies and requirements	X	
31. Provide reporting on security testing results	X	
32. Provide initial review of security Break-Fix incidents and the determination if escalation, including to County Information Security, is warranted	X	
33. Provide standardized End-User operations and capabilities and also custom reports regardless of the End-User's location and/or department	X	
34. Identify and remove from the network any malicious-code (malcode) infected System	X	
35. Identify and provide countermeasures for malcode attacks (i.e., both prevention and remediation)	X	
36. Block unauthorized party access and provide notification of unauthorized access attempts	X	
37. Encrypt (and prioritize) all County traffic that uses public MPLS network transport facilities (such as OPT-E-MAN or DSL) through the engineering and implementation of generic routing encapsulation (GRE) VPN tunnels (e.g. 256-bit Advanced Encryption Standard (AES) key)	X	
38. Provide technical expertise for security audits	X	
39. Collect all logs and review all Break-Fixes reported by all other security services (e.g. NIPS, HIPS, penetration testing, and firewall).	X	
40. Maintain log files in accordance with County policies and MASLs	X	
41. Provide security reporting	X	
42. Provide fraud prevention, detection and reporting	X	
43. Provide, control, monitor, and maintain security encryption interface at the data network level	X	
44. Provide security devices on supported PBXs, voicemail systems, and other appropriate adjunct remote administration ports	X	
45. Implement security violation notification. This function notifies a designated station/End-User/administrator when a hacker attempts to breach System management	X	
46. Conduct security perimeter vulnerability assessments and annual penetration testing	X	

5.8. New Site Installation Services

5.8.1.   New Site Installation Services Overview

This section pertains to the New Site Installation Services component within the Network Services Framework. The New Site Installation Services component applies to the Plan and Build tasks needed for a new, networked County Location.

Services provided within this component are one-time activities that include, but are not limited to, setup of MDF/IDF, installation of network Equipment (note: the network equipment itself is included in the Data Network and Voice Services components), installation of Voice and Data Network cable plant (including trenching as required), installation of WAN circuit(s), and all Planning and Engineering required to ensure site functionality.

5.8.2.   New Site Installation Services High Level Requirements

5.8.2.1.   Install new County Locations using the following Site Type definitions:

5.8.2.2.   Type I – are defined by having either more than 1,000 voice jack Resource Units or more than 1,000 data jack Resource Units

5.8.2.3.   Type II – are defined by having either between 301 and 1,000 voice jack Resource Units or more than 300 data jack Resource Units

5.8.2.4.   Type III – are defined by having either between 11 and 300 voice jack Resource Units or more than 10 data jack Resource Units and are typically extensions of Type II Sites

5.8.2.5.   Type IV – are defined by having between 1 and 10 voice jack Resource Units and 3 or more data jack Resource Units.

5.8.2.6.   Type V – are not initially provisioned with any video conferencing, voice telephone, or voicemail capabilities but do contain three (3) or more data jack Resource Units

5.8.2.7.   Type VI - are defined by having either ten (10) or fewer voice jack Resource Units or two (2) or fewer data jack Resource Units

5.8.2.8.   Establish and maintain a predictable cost and methodology to install a new networked County Location

5.8.2.9.   Install sufficient data and voice ports that meet standards for network cable plant and match the number of projected users for the site.

5.8.3. New Site Installation Services — Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

New Site Installation Services: Plan, Build and Operate Requirements, Roles and Responsibilities

New Site Installation Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Submit Work Request to initiate New Site Installation indicating Site Type		X
2. Produce and submit plans for New Site Installation	X	
3. Review and approve plans for New Site Installation		X
4. Produce and submit policies and procedures for New Site Installation	X	
5. Review and approve policies and procedures for New Site Installation		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
6. Design and implement New Site Installation	X	
7. Implement County approved policies and procedures for New Site Installation	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
8. Support New Site Installation policies and procedures	X	

5.9. 3rd Party Network Access Services

5.9.1. 3rd Party Network Access Services Overview

This section pertains to the 3rd Party network access Services component within the Network Services. The 3rd Party network access Services component applies to security services and network bandwidth needed by a authorized 3rd party entity to gain access to the County network. Services provided within this component include, but are not limited to, protection from unauthorized network access, firewall services, intrusion detection and reporting, security monitoring, data protection, network management, network capacity and performance monitoring, and 3rd party network to County network connectivity.

5.9.2. 3rd Party Network Access Services High Level Requirements

5.9.2.1. Establish and maintain 3rd Party network access to County data network

5.9.2.2. Contractor shall refresh 3rd Party network assets (as defined in Section 5.9.1 above) on a 5 year refresh schedule, 20% per year, unless otherwise agreed by the County in writing, and at a County-approved deployment schedule that will minimize disruption and reduce risk. Refreshes of 3rd Party network assets may include

upgrades of active/intelligent components that provide significant upgrades in functionality and performance, if approved by the County

> ### 5.9.3. 3rd Party Network Access Services Environment

> #### 5.9.3.1. Scope of the Environment to be Supported

The following further describe and scope 3rd Party network access Services elements to be supported by Contractor and with which Contractor shall comply.

- Security Services

Security Services include all the hardware, software, and services provide to ensure secure and authorized access to the County network and networked assets via private network interconnections into the County network (e.g., for the Sheriff's network, District Attorney's network).

- Network Services

Network Services include all the hardware, software, and services needed by a 3rd party to access County network assets. This will be broken down into three (3) categories based on the private network circuit or connection from the 3rd Party to the County. The categories represent the potential maximum bandwidth consumption that a 3rd Party could attain. The circuit connecting to the County is the responsibility of the 3rd Party.

- Category 1 – any circuit or connection less than T1 (1.544mbps)

- Category 2 – any circuit or connection equal to T1

- Category 3 – any circuit or connection greater than T1

5.9.4. 3rd Party Network Access Services — Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

3rd Party Network Access Services: Plan, Build and Operate Requirements, Roles and Responsibilities

3rd Party Network Access Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendations for 3rd Party network access architecture	X	
2. Review and approve recommendations for 3rd Party network access architecture		X
3. Produce and submit plans for monitoring and managing access to the County network from 3rd Parties entities	X	
4. Review and approve plans for monitoring and managing access to the County network from 3rd Parties entities		X
5. Produce and submit recommendations on firewall policies that comply with County policy	X	
6. Review and approve firewall policies		X
7. Produce and submit recommendation of 3rd Party network access Services assets refresh or upgrade plan on a yearly basis	X	
8. Review and approve recommendations on 3rd Party network access Services assets refresh or upgrade plan		X
9. Produce and submit plans for 3rd Party network access Services asset updates or patches	X	
10. Review and approve plans for 3rd Party network access Services asset updates or patches		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
11. Design, test and implement approved 3rd Party network access architecture	X	
12. Design and implement monitoring and managing access plans as approved	X	
13. Design, test and implement approved firewall policies	X	
14. Design, test, implement and report 3rd Party network access Services assets refresh or upgrade	X	
15. Review and approve reports for 3rd Party network access Services assets refresh or upgrade		X
16. Design, test and implement updates or patches approved for 3rd Party network access Services assets	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
17. Provide support, including break-fix, for all 3rd Party network access Services assets	X	
18. Provide Services in conformance to firewall policies and requirements	X	
19. Support 3rd Party network access Services refresh	X	
20. Manage network interfaces between the County and 3rd Parties	X	
21. Produce and submit network utilization, capacity and performance reports	X	
22. Provide initial review of security Break-Fix incidents and the determination if escalation, including to County Information Security, is warranted	X	

3rd Party Network Access Service: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
23. Provide standardized End-User operations and capabilities and also custom reports regardless of the End-User's location and/or department	X	
24. Identify and remove from the network any malicious-code (malcode) infected System	X	
25. Identify and provide countermeasures for malcode attacks (i.e., both prevention and remediation)	X	
26. Collect all logs and review all Break-Fixes reported by all other security services (e.g. NIPS, HIPS, penetration testing, and firewall).	X	
27. Maintain log files in accordance with County policies and MASLs	X	
28. Provide security reporting	X	
29. Provide fraud prevention, detection and reporting	X	

5.10. Wireless Access Services

5.10.1. Wireless Access Services Overview

This section pertains to the Wireless Access Services component within the Network Services Framework. The Wireless Access Services component applies to the 802.11x wireless access points located at County Sites. The Wireless Access Points can allow multiple, secure and authorized wireless connections into the County network.

Services provided within this component include, but are not limited to, network management, network capacity and performance monitoring, wireless network security, network engineering, and asset refresh.

5.10.2. Wireless Access Services High Level Requirements

5.10.2.1. Contractor shall maintain currency on Wireless Access Services assets

5.10.2.2. Contractor shall ensure that all devices that attached to the Wireless Access Services are valid and authorized

5.10.2.3. Contractor shall ensure that the Wireless Access Services network is secure

5.10.2.4. Contractor shall refresh Wireless Access Services assets based on a five (5) year refresh cycle and the asset's installation date

5.10.3. Wireless Access Services – Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Wireless Access Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Wireless Access Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendation for Wireless Access Services architecture	X	
2. Review and approve Wireless Access Services architecture		X
3. Produce and submit Wireless Access Services refresh plan on a yearly basis	X	
4. Review and approve Wireless Access Services refresh plan on a yearly basis		X
5. Produce and submit Wireless Access Services policies and procedures	X	
6. Review and approve Wireless Access Services policies and procedures		X
7. Produce and submit Wireless Access Services security architecture	X	
8. Review and approve Wireless Access Services security architecture		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
9. Design, test and implement approved Wireless Access Services architecture	X	
10. Deploy, manage, communicate and report on activities related to Wireless Access Services refresh	X	
11. Review and approve Wireless Access Services refresh report		X
12. Develop and implement Wireless Access Services policies and procedures	X	
13. Design, test and implement approved Wireless Access Services architecture	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
14. Provide support, including break-fix, for all Wireless Access Services assets	X	

6. DATA CENTER SERVICES

6.1. Data Center Services Overview

This section pertains to the Data Center Services framework. Data Center Services consist of the Plan, Build and Operate services that include the assets, facilities and services associated with centralized, shared computing environment. Data Center Services are composed of the following components: Application Servers; Infrastructure Servers; E-Mail Service; Storage; and Managed Print.

Service Framework
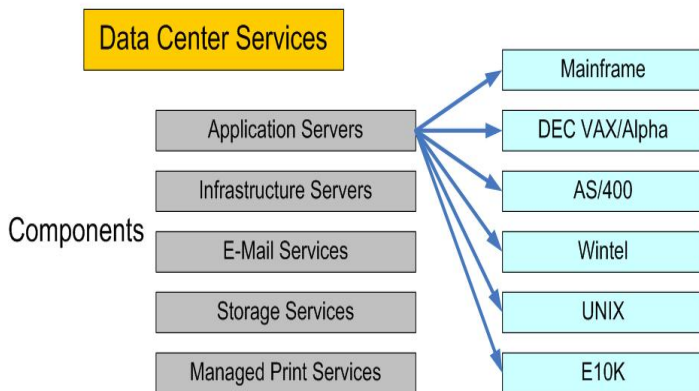
6.2. Data Center Services High Level Requirements

6.2.1. Data Center Services will be spread across multiple (two) Tier IV Contractor Data Centers with an appropriate split of application processing to achieve the following benefits:

6.2.2. Reduced business risk by having 50 percent of the priority applications in one facility

6.2.3. Reduced cost for disaster recovery services by using existing server capacity, rather than paying for idle servers, storage, and facilities

6.2.4. Simplified annual drills since processing is already available in each data center

6.2.5. Contractor will provide a single operations team across the dual data centers

6.2.6. Contractor will provide technology refresh, redundant systems and improved application architecture design

6.2.7. Contractor will provide technology assistance and support to the County in planning and standard-setting activities

6.2.8. Contractor will provide secure leveraged services where appropriate so the County will have the flexibility to quickly grow or reduce consumption, including:

6.2.9. Mainframe processing

6.2.10. Storage - Storage Area Network (SAN) and Network Attached Storage (NAS)

6.2.11. Centralized backups

6.2.12. Centralized monitoring

6.2.13.   Maximize the efficient use of storage throughout the Data Center to minimize and eliminate underutilization of valued resources.

6.2.14.   Maintain a stable, reliable infrastructure to support business applications throughout the County.

6.2.15.   Contractor shall publish all Data Center Services asset standards on the County Intranet

6.3.   Data Center Services Environment

6.3.1.   Scope of the Environment to be Supported

6.3.1.1.   Contractor Facilities

Contractor will maintain and operate two (2) active Data Centers to support the County Data Center Services environment. Production application processing in the two Data Centers shall be split to enable timely recovery of Priority 1 and Priority 2 applications at one Data Center in the event of a disaster at the other Data Center.

6.4.   Data Center Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Data Center Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Data Center Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	Contractor	County
1. Produce and submit recommendations for Data Center Services Framework solutions that best meet County business needs	X	
2. Review and approve recommendations for Data Center Services Framework solutions that best meet County business needs		X
3. Produce and submit operational planning for Data Center Services Framework capacity and performance purposes	X	
4. Review and approve operational planning for Data Center Services Framework capacity and performance purposes		X
5. Produce and submit recommendations for establishing standards, defining architecture and new project initiatives in the Data Center Services Framework.	X	
6. Review and approve recommendations for establishing standards, defining architecture and new project initiatives in the Data Center Services Framework.		X
7. Produce and submit recommended Data Center Services administration policies and procedures.	X	

Data Center Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
8. Review and approve Data Center Services administration policies and procedures		X
9. Produce and submit operational documentation on system functions, change management, and Problem management processes.	X	
10. Review and approve operational documentation on system functions, change management, and Problem management processes.		X
11. Produce and submit recommendations on hardware standards for Data Center Services assets	X	
12. Review and approve hardware standards for Data Center Services assets		X
13. Produce and submit recommendation on software standards for Data Center Services assets	X	
14. Review and approve software standards for Data Center Services assets		X
15. Produce and submit recommendation for upgrades to Data Center Services assets as needed to meet business needs	X	
16. Review and approve upgrades to Data Center Services assets as needed to meet business needs		
17. Produce and submit plans for security updates to Data Center Services assets	X	
18. Review and approve plans for security updates to Data Center Services assets		X
19. Produce and submit yearly Data Center Services asset consolidation strategy	X	
20. Review and approve yearly Data Center Services asset consolidation strategy		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
21. Provide all design and engineering required to support Data Center Services Framework	X	
22. Produce and submit to County all design and engineering documentation	X	
23. Review and approval of all design and engineering documentation		X
24. Provide all test services required to support Data Center Services Framework	X	
25. Produce and submit to County all test documentation	X	
26. Review and approve all test documentation		X
27. Manage deployment efforts using formal project management tools, methodologies and standards (e.g., ITIL change and configuration management practices)	X	
28. Deploy code and content using automated tools which include publishing, promoting, and rolling back code and content.	X	
29. Conduct deployment reviews and provide results to County	X	
30. Review and approve results of deployment reviews		X
31. Install security patches and security products	X	

Data Center Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
32. Provide support, including break-fix, for all Data Center Services assets	X	
33. Perform maintenance activities during non-peak hours (will be determined in coordination with the County)	X	
34. Provide the County with a system software upgrade list as it becomes available from software suppliers	X	
35. Measure, monitor, and adjust data center system and network parameters to make certain the required level of performance is maintained	X	
36. Analyze performance management information of current and expected capacity to make recommendations for server upgrades, load balancing, and functional splitting. Evaluate trend data and factor it into the overall system requirements.	X	

6.5.   Application Server Services

6.5.1.   Application Server Services Overview

This section pertains to the Application Server Services component within the Data Center Framework. The Application Server Services component applies to all hardware and software needed to maintain and support Application Servers. The physical Application Servers in the Data Center includes, but is not limited to, Mainframe, AS/400, VAX/VMS, Alpha, WINTEL, UNIX and E10K servers. The software component defined will relate to the operating system standardization across the different Application Server types. Services provided within this component include, but are not limited to, Application Server refresh, operating system update and support, management of server resources and server capacity analysis.

6.5.2.   Application Server Services High Level Requirements

6.5.2.1.   Migrate or retire Applications on legacy, older obsolete Application Servers.

6.5.2.2.   Contractor shall maintain currency of the operating systems on Application Server assets

6.5.2.3.   Provide hardware refresh for specified Application Servers assets.

6.5.2.4.   Provide hardware server consolidation recommendations, as well as, server migration recommendations to less expensive and more supportable hardware platforms.

6.5.2.5.   Migrate Application Server storage to the centralized, shared storage environment (Section 6.8 of Schedule 4.3) for all refreshed Application Servers except Application Servers remaining on DASD (i.e. Mainframe, AS/400, VAX)

6.5.2.6.   Maintain Application Test Servers to support the Application Development and integration process

6.5.2.7.   Provide centralized support for remote server's physically located offsite from the data center.

6.5.2.8.   Perform backups to all Application Servers assets

6.5.3.   Application Server Services Environment

6.5.3.1.   Hardware and Software

The Application Server types include:

- Mainframe

Mainframe hardware standards are not applicable.

Mainframe will continue to utilize DASD for storage requirements and will not be part of the centralized, consolidated storage environment.

Contractor shall refresh the shared Mainframe on a 5 year refresh schedule, unless otherwise agreed to by the County in writing, based on a County-approved plan that will minimize disruption and reduce risk. Refresh of the Mainframe may include periodic upgrades to key components that provide significant upgrades in functionality and performance, if approved by the County (e.g., CPU). Refresh of the Mainframe is not considered a billable Application Services task except for County-approved remediation of application software. If the operating system requires a hardware refresh the Contractor will perform this refresh as required with proper notification.

- DEC VAX

DEC VAX hardware standards are not applicable. No additional DEC VAX hardware will be required to support the County. Current units will be phased out over a period of time to be determined by the County.

DEC VAX operating system revisions will be reviewed annually prior to the subsequent Contract Year (at least 60 days prior to start of new Contract Year) and updates will go into effect at the start of each Contract Year. The process for determining updates to the operating system will be based on recommendations from the Contractor and approved by the County. The County intends to maintain currency with the operating system without major disruption or rework of the Application(s) hosted.

DEC VAX will continue to utilize DASD for storage requirements and will not be part of the centralized, consolidated storage environment.

There is no refresh for DEC VAX assets.

- VMS

VMS based Application Server (excludes DEC VAX) hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. Hardware standards will be set for three classes of server types: Small, Medium and Large. Some of the basic differences between small, medium and large severs will be number of CPUs, the speed or processing power of the CPUs, and the amount of memory installed. The process to set VMS based Application Server hardware standards will be based on recommendations made by the Contractor and approved in writing by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

VMS operating system revisions will be reviewed annually prior to the subsequent Contract Year (at least 60 days prior to start of new Contract Year) and updates will go into effect at the start of each Contract Year.

Each Contract Year, 20% of the VMS based Application Servers will be refreshed. The refresh will occur over the course of the Contract Year using a straight line methodology (20% of assets evenly refreshed over 12 months). Hardware and operating system that meet current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of the refresh process. Refresh of the VMS based Application Server is not considered a billable Application Services task except for County-approved remediation of application software.

- AS/400

AS/400 hardware standards are not applicable. No additional AS/400 hardware will be required to support the County. The current unit may be phased out over a period of time to be determined by the County.

AS/400 operating system revisions will be reviewed annually prior to the subsequent Contract Year (at least 60 days prior to start of new Contract Year) and updates will go into effect at the start of each Contract Year.

AS/400 will continue to utilize DASD for storage requirements and will not be part of the centralized, consolidated storage environment.

There is no refresh for AS/400 assets.

- Wintel

Wintel Application Servers hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. The new hardware standards shall be stated in the Standards and Procedures Manual and shall be used for all new or refreshed servers during that Contract Year. Hardware standards will be set for three classes of server types: Small, Medium and Large. Some of the basic differences between small, medium and large severs will be number of CPUs, the speed or processing power of the CPUs, and the amount of memory installed. All Wintel

Application Servers standards will be set with minimum storage installed. Application data storage will not be hosted on the Wintel Application Servers but will utilize the centralized, consolidated storage environment (Section 6.8 of Schedule 4.3). The process to set Wintel Application Servers hardware standards will be based on recommendations made by the Contractor and approved in writing by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

Wintel Application Servers operating system revisions will be reviewed annually prior to the subsequent Contract Year (at least 60 days prior to start of new Contract Year) and updates will go into effect at the start of each Contract Year. The process for determining updates to the operating system will be based on recommendations from the Contractor and approved by the County. The County intends to maintain currency with the operating system without major disruption or rework of the Application(s) hosted.

Each Contract Year, 20% of the Wintel Application Servers will be refreshed. The refresh will occur over the course of the Contract Year using a straight line methodology (20% of assets evenly refreshed over 12 months). Hardware that meets current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of the refresh process. Refresh of the Wintel Application Server is not considered a billable Application Services task except for County-approved remediation of application software.

- UNIX

UNIX based Application Servers hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. The new hardware standards shall be stated in the Standards and Procedures Manual and shall be used for all new or refreshed servers during that Contract Year. Hardware standards will be set for three classes of server types: Small, Medium and Large. Some of the basic differences between small, medium and large severs will be number of CPUs, the speed or processing power of the CPUs, and the amount of memory installed. All UNIX Application Servers standards will be set with minimum storage installed. Application data storage will not be hosted on the UNIX Application Servers but will utilize the centralized, consolidated storage environment (Section 6.8 of Schedule 4.3). The process to set UNIX based Application Servers hardware standards will be based on recommendations made by the Contractor and approved in writing by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

UNIX based Application Servers operating system revisions will be reviewed annually prior to the subsequent Contract Year (at least 60 days prior to start of new Contract Year) and updates will go into effect at the start of each Contract Year. The process for determining updates to the operating system will be based on recommendations from the Contractor and approved by the County. The County intends to maintain currency with the operating system without major disruption or rework of the Application(s) hosted.

Each Contract Year, 20% of the UNIX based Application Servers will be refreshed. The refresh will occur over the course of the Contract Year using a straight line methodology (20% of assets evenly refreshed over 12 months). Hardware and operating system that meet current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of the refresh process. Refresh of the UNIX Application Server is not considered a billable Application Services task except for County-approved remediation of application software.

- E10K

The E10K based Application Server is a currently defined and specialized hardware standard. The E10K will be re-platformed during Transition unless otherwise agreed upon by the County in writing. The E10K Application Server will not be refreshed.

- Class of Application Servers

- Application Production Servers

Application Production Servers host Portfolio Applications that are identified in the COSD Portfolio Catalog. Application servers also host such services as business rule execution, browser based presentation and database management systems. The Application Server becomes Production when the Portfolio Application is considered System of Record.

- Application Pre-Production Servers

Application Pre-Production Servers are "in development" Application Servers that will be defined like Application Test Servers from the time of installation until completion of application development and integration as evidenced by customer acceptance of the new application.

- Application Test Servers

Application Test Servers can be any defined class of Application Server specified within this section. The Test Server refers to a dedicated Application Server that is used in the test phase of the Application development and integration process. Application Test Servers will receive all the same services as any Application Server with the following exceptions: (1) return to service for break/fix for Application Test Servers will be within 48 hours, and (2) Backups will be performed weekly and backup tapes will be retained for one month.

6.5.3.2.   Contractor Facilities

The Application Server Services will be performed across Contractor Data Centers.

6.5.4. Application Server Services Requirements, Roles & Responsibilities

6.5.4.1. Application Server Services Requirements

Mainframe usage will be based on CPU hours. The Contractor must be able to correlate and report CPU hours directly to End-User processing.

6.5.4.2. Application Server Services: Plan, Build and Operate Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Application Server Service: Plan, Build and Operate Requirements, Roles and Responsibilities

Application Server Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendations for hardware standards of Application Server Services assets on a yearly basis	X	
2. Review and approve hardware standards for Application Server Services assets		X
3. Produce and submit recommendations for operating system standards for Application Server Services assets on a yearly basis	X	
4. Review and approve operating system standards for Application Server Services assets		X
5. Produce and submit Application Server Services refresh plan on a yearly basis	X	
6. Review and approve Application Server Services refresh plan		X
7. Produce and submit Application Server Services storage migration and consolidation plan on a yearly basis	X	
8. Review and approve Application Server Services storage migration and consolidation plan		X
9. Produce and submit backup/recovery polices and procedures	X	
10. Review and approve backup/recovery policies and procedures		X
11. Produce and submit recommendations for Application Server placement into County facilities	X	
12. Review and approve recommendations for Application Server placement into County facilities		X
13. Produce and submit recommendations for refresh of the E10K Application Server	X	
14. Review and approve recommendations for refresh of the E10K Application Server		X
15. Produce and submit recommendations for Application Server Services consolidation plan on a yearly basis.	X	

Application Server Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
16. Review and approve Application Server Services consolidation plan.		X
17. Produce and submit Application Server Services assets plans for updates or patches as needed for reliable operations and to maintain security	X	
18. Review and approve Application Server assets Services plans for updates or patches as needed for reliable operations and to maintain security		X
19. Produce and submit recommendations for monitoring and exceptional conditions procedures.	X	
20. Review and approve monitoring and exceptional conditions procedures.		X
21. Produce and submit recommendations for job scheduling requirements, interdependencies, County contacts, and rerun requirements for all production jobs	X	
22. Review and approve job scheduling requirements, interdependencies, County contacts, and rerun requirements for all production jobs		X
23. Recommend replacement or upgrade of County utility software programs with commercially available software to support processing operations	X	
24. Produce and submit recommendations for standards on production jobs and Job Control Language (JCL)	X	
25. Review and approve recommendations for standards on production jobs and Job Control Language (JCL)		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
26. Provide all design and engineering required to deploy, refresh and support Application Server Services assets.	X	
27. Design, test and implement hardware standards for Application Server Services assets	X	
28. Design, test and deploy operating system standards for Application Server Services assets.	X	
29. Deploy, manage, communicate and report on activities related to Application Server Services refresh	X	
30. Review and approve reports on Application Server Services refresh		X
31. Design, test and execute Application Server Services storage migration and consolidation plan	X	
32. Implement approved backup/recovery policies and procedures	X	
33. Design, test and deploy approved Application Server Services consolidation plans	X	
34. Test and deploy approved updates or patches to Application Server Services assets	X	
35. Define test and demand batch scheduling requirements	X	
36. Prepare tests and Demand Batch Jobs for execution	X	
37. Execute test and Demand Batch Jobs on appropriate Servers	X	
38. Execute production batch jobs on appropriate Servers as defined by County schedules	X	

Application Server Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
39. Implement scheduling tools for automating job execution	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
40. Provide support, including break-fix, for all Application Server Services assets	X	
41. Manage and maintain Application Server Services test environment	X	
42. Provide support for Application Servers located in County Locations	X	
43. Provide support for Application Pre-Production and Application Test Servers	X	
44. Provide support for Application Server Services storage migration and consolidation plan	X	
45. Perform backups on Application Servers assets as defined	X	
46. Conduct data and Application migration that is necessary due to any Application Server refresh or break-fix activity	X	
47. Manage the migration of production jobs to the JCL and program libraries	X	
48. Provide job scheduling, job execution, reporting and resolution	X	
49. Manage scheduling tools for automating job execution (e.g., job workflow processes, interdependencies, County contacts, and rerun requirements file exchange functions and print management)	X	
50. Monitor progress of scheduled jobs and identify and Resolve issues in scheduling process	X	
51. Schedule and process special job requests	X	
52. Restart failed jobs to ensure completeness.	X	
53. Maintain documentation of job scheduling, contact, rerun and interdependencies/dependency structures.	X	
54. Maintain, and utilize, an emergency contact list and escalation procedures to Resolve Abnormal Endings (ABENDs)	X	
55. Resolve abnormal terminations caused by conditions external to production programs	X	
56. Review on a daily basis all batch/schedule Failures to determine root cause and ensure a permanent solution is applied	X	
57. Notify County and maintain a history of job completion results	X	
58. Assess the processing time for each batch application and identify where run-time improvements can be made in areas such as shortening a job flow's critical path, reducing the run-time for specific jobs, and reducing the overall number of jobs to process on an initial and ongoing basis	X	
59. Provide input processing, for activities such as loading third-party tape and receipt and/or transmission of batch files	X	
60. Support send and receive electronic data transmissions (e.g., EDI, FTP)	X	
61. Perform upgrades to Application Server Services assets	X	
62. Monitor, operate, maintain and support OS (Operating Systems) installed on Application servers	X	

Application Server Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
63. Monitor, operate, maintain and support the 3rd party Applications running on Application servers	X	
64. Execute standard operating procedures at scheduled times	X	
65. Start-up and shut-down County online/interactive systems according to defined schedules or upon approved requests	X	
66. Coordinate and manage 3rd-party vendor hardware and software maintenance to meet County requirements	X	
67. Ensure that System management and monitoring tools do not impact County operations	X	
68. Provide automated event monitoring tools that will notify Applications Team for immediate response if there is an application-related problem	X	

6.6. Infrastructure Services

6.6.1. Infrastructure Services Overview

This section pertains to the Infrastructure Services component within the Data Center Framework. The Infrastructure Services component applies to all hardware and software needed to maintain and support a distributed network environment. Services provided within this component include, but are not limited to, server deployment and maintenance, server refresh, server tuning and monitoring, software distribution, and systems management. Additional network services within this component include, but are not limited to, DNS, DHCP, End-User Authentication, directory services, software distribution, system management, print servers, ftp, certificate servers, proxy services, web filtering and any Contractor internal servers/services needed to support the environment. Servers that support the Infrastructure Service component can be UNIX or Windows based and will be dependent on the service being provided.

6.6.2. Infrastructure Services High Level Requirements

6.6.2.1. Contractor shall provide update and support for a distributed network environment

6.6.2.2. Contractor shall provide centralized and standardized system that automates network management of user data, security, and distributed resources

6.6.2.3. Contractor shall automate software distribution including delivering applications, images, and patches to the environment using industry standard tools

6.6.2.4. Contractor shall provide an easy to use, secure and responsive End-User authentication methodology

6.6.2.5. The Infrastructure Services, hardware and software, must be designed and maintained to support business strategy and applications

6.6.2.6.   Contractor shall support and maintain the Public Library public infrastructure

6.6.3.   Infrastructure Services Environment

6.6.3.1.   Hardware and Software

Infrastructure Server (UNIX or Intel) hardware standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. The new hardware standards shall be stated in the Standards and Procedures Manual and shall be used for all new or refreshed servers during that Contract Year. Hardware standards will be set for three classes of server types: Small, Medium and Large. Some of the basic differences between small, medium and large severs will be number of CPUs, the speed or processing power of the CPUs, and the amount of memory installed. The process to set Infrastructure Server hardware standards will be based on recommendations made by the Contractor and approved in writing by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract Year.

Infrastructure Server operating system revisions will be reviewed annually prior to the subsequent Contract Year (at least 60 days prior to start of new Contract Year) and updates will go into effect at the start of each Contract Year. The process for determining updates to the operating system will be based on recommendations from the Contractor and approved by the County. The Contractor will maintain software (including operating system) on Infrastructure servers within one (1) year but not earlier then three (3) months after the release date of the software.

Infrastructure Servers will be configured with their own specific storage and will not be integrated into the centralized, consolidated storage environment (Section 6.8 of Schedule 4.3). The infrastructure servers will not be considered End-User file storage systems.

Each Contract Year, 20% of the Infrastructure Servers will be refreshed, unless otherwise approved in writing by the County, and will include the Public Library public infrastructure. The refresh will occur over the course of the Contract Year using a straight line methodology (20% of assets evenly refreshed over 12 months). Hardware that meets current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of the refresh process.

6.6.3.2.   Contractor Facilities

The Infrastructure Services will be performed across both active Contractor Data Centers. Additional Infrastructure Servers may be placed in County sites as needed to meet the MASLs.

6.6.4.   Infrastructure Services Requirements, Roles & Responsibilities

6.6.4.1.   Infrastructure Services Requirements

Infrastructure Servers used for the delivery of Services in E-Mail Services (Section 6.7 of Schedule 4.3) and Storage Services (Section 6.8 of Schedule 4.3) are not included within this section. These servers are specified and supported within their respective section.

6.6.4.2. Infrastructure Services: Plan, Build and Operate Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Infrastructure Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Infrastructure Servers Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendations for improvement to Infrastructure Services.	X	
2. Review and approve improvement to Infrastructure Services.		X
3. Produce and submit recommendations for Infrastructure Server placement into County facilities	X	
4. Review and approve recommendations for Infrastructure Server placement into County facilities		X
5. Produce and submit recommendations for hardware standards of Infrastructure Server Services assets on a yearly basis.	X	
6. Review and approve hardware standards for Infrastructure Server Services assets.		X
7. Produce and submit recommendations for operating system standards for Infrastructure Server Services assets on a yearly basis.	X	
8. Review and approve operating system standards for Infrastructure Server Services assets		X
9. Produce and submit Infrastructure Server Services refresh plan on a yearly basis	X	
10. Review and approve Infrastructure Server Services refresh plan.		X
11. Produce and submit recommendations for Infrastructure Server Services consolidation plan on a yearly basis.	X	
12. Review and approve Infrastructure Server Services consolidation plan.		X
13. Produce and submit Infrastructure Server Services assets plans for updates or patches as needed for reliable operations and to maintain security	X	
14. Review and approve Infrastructure Server Services assets plans for updates or patches as needed for reliable operations and to maintain security		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**

Infrastructure Servers Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
15. Provide all design and engineering required to deploy, refresh and support Infrastructure Server Services assets.	X	
16. Design, test and implement approved improvements to Infrastructure Services	X	
17. Design, test and implement hardware standards for Infrastructure Server Services assets	X	
18. Design, test and deploy operating system standards for Infrastructure Server Services assets.	X	
19. Deploy, manage, communicate and report on activities related to Infrastructure Server Services refresh	X	
20. Review and approve reports on Infrastructure Server Services refresh		X
21. Design, test and deploy approved Infrastructure Server Services consolidation plans	X	
22. Test and deploy approved updates or patches to Infrastructure Server Services assets	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
23. Provide support, including break-fix, for all Infrastructure Server Services assets	X	
24. Provide support for Infrastructure Servers located in County facilities	X	
25. Conduct data and Infrastructure migration that is necessary due to any Infrastructure Server Services refresh or break-fix activity	X	
26. Perform upgrades to Infrastructure Server Services assets	X	
27. Monitor, operate, maintain and support OS (Operating Systems) installed on Infrastructure Server Services assets.	X	
28. Manage Infrastructure Server Services to meet performance Minimum Service Levels	X	
29. Maintain and support the Public Library public infrastructure web filtering	X	
30. Manage bandwidth and latency constraints and minimize impacts during automated software deployment	X	
31. Provide deployment services using automated tools for remote access/VPN users	X	
32. Provide deployment reports to include success and failure statistics of scheduled distributions — such as patches or upgrades	X	

6.7. E-Mail Services

6.7.1. E-Mail Services Overview

This section pertains to the Electronic Mail (E-mail) Services component within the Data Center Framework. The E-Mail Services component applies to all hardware and software needed to maintain and support Electronic Mail. The E-Mail system will be based on Microsoft Exchange. Services provided within this component include, but are not limited to, E-Mail account management, refresh, Exchange software updating and

support, management of E-Mail server resources, server capacity analysis and server and storage consolidation. E-Mail services includes all the components needed to ensure reliable and uninterrupted delivery of E-Mail to County End-Users, these services include, but are not limited to, E-Mail relays, Blackberry Enterprise Services, Web Access Servers, Proxy Servers, E-Mail servers, Fax Servers and all supporting E-Mail services assets.

6.7.2.   E-Mail Services High Level Requirements

6.7.2.1.   Provide a split Active Directory/Exchange server environment between the two data centers to allow for a disaster recovery of the Exchange environment from either facility

6.7.2.2.   Provide perimeter services that will protect against SPAM and E-Mail Worms or malicious software

6.7.2.3.   Support secure remote access to E-Mail resources to authorized users.

6.7.2.4.   Refresh and update E-Mail resources to meet service levels and capacity

6.7.2.5.   Maintain the E-Mail environment within one version of the latest release of Microsoft Exchange.

6.7.2.6.   Synchronize E-Mail directories with all County Departments (e.g. Sheriff, District Attorney, DCSS)

6.7.2.7.   Integrate fax capability into E-Mail desktop client for receipt and transmission

6.7.3.   E-Mail Services Environment

6.7.3.1.   Hardware and Software

E-Mail Servers (UNIX or Intel) hardware standards will be based upon standards established for Infrastructure Services in section 6.6.3.1.

E-Mail Servers operating system revisions will be based upon standards established for Infrastructure Services in section 6.6.3.1. The E-Mail application, Microsoft Exchange, will be maintained to within one version of the current released product. The Exchange servers will be patched and updated as needed to ensure continuous reliable transport of E-Mail to and from County End-Users.

The County's current e-mail environment will be consolidated at time of transition into Exchange 2003, split between the two primary data centers to allow for a built in disaster recovery function. The Services will include the spam and virus filtering provided by an appliance device. The End User mailbox shall be in accordance with the County's e-mail retention policy.

Each Contract Year, 20% of the E-Mail Servers will be refreshed, unless otherwise agreed by the County in writing. The refresh will occur over the course of the Contract Year using a straight line methodology (20% of assets evenly refreshed over 12 months). Hardware and operating system that meet current Contract Year standards (defined on an annual basis during the preceding Contract Year) will be deployed as part of the refresh process.

6.7.4.   E-Mail Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

E-Mail Services: Plan, Build and Operate Requirements, Roles and Responsibilities

E-Mail Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit E-Mail Services operational and computing procedures.	X	
2. Review and approve E-Mail Services operational and computing procedures.		X
3. Produce and submit E-Mail Services architecture	X	
4. Review and approve E-Mail Services architecture		X
5. Produce and submit recommendations for Exchange application standards on a yearly basis.	X	
6. Review and approve Exchange application standards		X
7. Produce and submit E-Mail Server refresh plan on a yearly basis	X	
8. Review and approve E-Mail Server refresh plan.		X
9. Produce and submit recommendations for consolidating Exchange servers	X	
10. Review and approve recommendations for consolidating Exchange servers		X
11. Produce and submit backup/recovery polices and procedures	X	
12. Review and approve backup/recovery polices and procedures		X
13. Produce and submit defining policies and procedures for functions including email, calendaring and mail messaging delivery components	X	
14. Review and approve policies and procedures for functions including email, calendaring and mail messaging delivery components		X
15. Produce and submit plans to update and patch E-Mail Services to maintain reliability and security	X	
16. Review and approve plans to update and patch E-Mail Services to maintain reliability and security		X

E-Mail Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
17. Produce and submit procedures for directory synchronization with County departments	X	
18. Review and approve procedures for directory synchronization with County departments		X
19. Produce and submit plans and procedures to protect County End-Users from SPAM, E-Mail Worms or malicious software.	X	
20. Review and approve plans and procedures to protect County End-Users from SPAM, E-Mail Worms or malicious software.		X
21. Produce and submit End-User tip sheets on use of E-Mail services.	X	
22. Review and approve for distribution End-User tip sheets on use of E-Mail services		X
23. Produce and submit plans for E-Mail integrated Fax solution	X	
24. Review and approve E-Mail integrated Fax solution		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
25. Design and implement E-Mail Services operational and computing procedures	X	
26. Design, test and implement approved changes to the Exchange application.	X	
27. Design, test and deploy E-Mail server refresh according to the approved plan.	X	
28. Design, test and implement approved plans for consolidation of Exchange servers or Exchange storage	X	
29. Design and implement policies and procedures for functions including email, calendaring and mail messaging delivery components	X	
30. Design, test and implement approved updates and patches to E-Mail Services.	X	
31. Design, test and implement directory synchronization with out-of-scope County departments.	X	
32. Design, test and implement approved plans and procedures to protect County End-Users from SPAM, E-Mail Worms or malicious software.	X	
33. Implement approved backup/recovery policies and procedures	X	
34. Distribute End-User approved tip sheets	X	
35. Implement E-Mail retention policies	X	
36. Design and implement E-mail integrated Fax solution	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
37. Provide support, including break-fix, for all E-Mail Services assets		
38. Manage and support E-Mail Services to meet operational and computing procedures.	X	
39. Manage and support Exchange application	X	

E-Mail Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
40. Support and provide E-Mail accounts to End-Users	X	
41. Provide and support migration of End-User mailboxes in support of E-Mail server refresh or break-fix activity	X	
42. Manage and support directory synchronization operations	X	
43. Manage and support SPAM services and other specific services needed to protect End-Users	X	
44. Manage and maintain E-Mail accounts, Blackberry accounts, and E-Mail SMTP addresses	X	
45. Manage and maintain E-Mail Services to Minimum Service Levels	X	
46. Perform backups on E-Mail Services Servers assets as defined	X	
47. Support e-mail retention policies	X	
48. Manage and support integrated Fax Services	X	

6.8. Storage Services

6.8.1. Storage Services Overview

This section pertains to the Storage Services component within the Data Center Services Framework. There are two primary categories of data storage:

Attached Storage –Applies to all storage used to store End-User Data that is directly attached to a physical Application Server and includes Mainframe, VAX, VMS, AS/400, UNIX and WINTEL Application Servers.

Shared Storage Services - this applies to a centralized and consolidated storage environment for End-User Data and includes Storage Area Network (SAN), and Network Attached Storage (NAS). .

Services provided within the Storage Services component (i.e., both Attached Storage and Shared Storage Services) include, but are not limited to, end-user access, recovery (via backup and replication) of all Storage Services assets, data protection, storage reporting to the business unit, low org or end-user, storage capacity analysis, and storage management. In addition, services provided within the Storage Services include, but are not limited to, storage consolidation, tiered storage and migration from Attached Storage to centralized Storage Services where appropriate.

Attached Storage is the directly attached storage that resides on legacy Application Servers. The purpose of this storage type is for those Application Servers that exist in the environment, will not be immediately refreshed and contain End-User data. As Application Servers are refreshed End-User data will be migrated from Attached Storage to Shared Storage unless there are specific technical reasons why the End-User data must remain on Attached Storage.

The Shared Storage Services infrastructure shall be a centralized, integrated, tiered repository for County generated data. The purpose of the Shared Storage Services infrastructure is the elimination of storage underutilization, avoidance of "islands of storage", a decrease in overall recovery time and efficiency of storage administration and management (including management of storage capacity). Application Servers, as they are refreshed or newly acquired, shall be integrated into the Shared Storage Services infrastructure.

Shared Storage Services will be broken down into levels or types of storage. Level 1 will be high-performing storage technology with a high degree of I/O performance, and will contain mission critical data for business operations. Level 2 will be low cost, high capacity storage that does not require a high degree of I/O performance and/or is viewed as non-mission critical to business operations and may be considered near-line storage.

The current configurations for each of the Level 1 and Level 2 storage services utilize a shared SAN and backup environment. The specific service definitions are listed below. Changes to these configurations will be mutually agreed upon over the term of the contract as technology changes.

Level 1 Storage – Shared Storage Environment using Clarion EMC – Raid 5 High Performance Drives

Level 2 Storage – Shared Storage Environment using Clarion EMC – Raid 5 Lower Performance Drives

Storage Services (Attached or Shared) will be measured by installed, usable capacity which does not include any data replication or other storage requirements necessitated by the Contractor's Disaster Recovery or backup and recovery solutions. The growth of storage capacity throughout the County needs to be predictable and managed. Unmanaged data growth should be eliminated throughout the storage infrastructure by implementing storage management and storage reporting. Additional capacity to the shared storage environment, by level, will be proposed by the Contractor and approved by the County.

6.8.2. Storage Services High Level Requirements

6.8.2.1. Develop a consolidated and centralized storage environment

6.8.2.2. Implement storage management processes and procedures

6.8.2.3. Produce Storage Service reports by Storage type and level down to the business unit, department and End-User.

6.8.2.4. Enable efficient and effective Storage Services management reporting to the business unit, department and End-User

6.8.2.5.   Implement centralized control and management of the Storage Services infrastructure

6.8.2.6.   Lower hardware and software maintenance costs associated with Shared Storage Services

6.8.2.7.   Manage data backups of Storage Services assets with the intent to decrease recovery time

6.8.2.8.   Provide automated backups over a network connection to the back up site where required to meet recovery times

6.8.2.9.   Provide secure and bonded transportation and offsite storage of backups

6.8.2.10.   Attached Storage Services assets shall be refreshed on the same cycle as its associated Application Server unless migrated to Shared Storage

6.8.2.11.   Shared Storage Services shall be refreshed at least every five (5) years based on Contractor's refresh schedule of the shared storage environment and upon prior notification to and approval of the County

6.8.3.   Storage Services Environment

6.8.3.1.   Hardware and Software

The Storage Services environment will include data from:

- End-User Data

End-User Data would be the data generated by a County Portfolio Application used to deliver business value to the County or its customers and stored typically on Application Servers. Other End-User data are files generated by County End-Users on Desktop Services assets using typically Office Automation tools such as Word, Excel and PowerPoint. This data is broken down into various types, such as, user home drives, department share drives, and enterprise share drives

- Mainframe

Mainframe will continue to utilize DASD for storage requirements and will not be part of the centralized, consolidated shared storage environment.

- DEC VAX

DEC VAX will continue to utilize DASD for storage requirements and will not be part of the centralized, consolidated shared storage environment.

- VMS

Refreshed or newly acquired VMS based servers will be migrated into the Shared Storage Services. VMS based servers are refreshed at a rate of 20% a year, so the expectation is that Storage consolidation will be achieved within five (5) years.

- AS/400

AS/400 will continue to utilize DASD for storage requirements and will not be part of the centralized, consolidated shared storage environment.

- Wintel

Refreshed or newly acquired Wintel Application Servers will be migrated into the Shared Storage Services. Wintel Application Servers are refreshed at a rate of 20% a year, so the expectation is that Storage consolidation will be achieved in no more then five (5) years.

- UNIX

Refreshed or newly acquired UNIX Application Servers will be migrated into the Shared Storage Services. UNIX Application Servers are refreshed at a rate of 20% a year, so the expectation is that Storage consolidation will be achieved in no more then five (5) years.

- E10K

The E10K will continue to use current storage until it is replaced/retired.

6.8.4. Storage Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Storage Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Storage Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendations on Shared Storage Services Architecture	X	

Storage Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
2. Review and approve recommendations on Shared Storage Services Architecture		X
3. Produce and submit plans on Shared Storage Services consolidation and Application Server migration to Shared Storage Service environment on a yearly basis	X	
4. Review and approve plans on Shared Storage Services consolidation and Application Server migration to Shared Storage Service environment on a yearly basis.		X
5. Produce and submit Storage Services management policies/procedures.	X	
6. Review and approve Storage Services management policies/procedures.		X
7. Produce and submit Storage Services reporting policies/procedures.	X	
8. Review and approve Storage Services reporting policies/procedures.		X
9. Produce and submit Storage Services policies and procedures	X	
10. Review and approve Storage Services policies and procedures		X
11. Produce and submit Storage Services refresh plan on a yearly basis	X	
12. Review and approve Storage Services refresh plan on a yearly basis		X
13. Produce and submit plans for meeting County Storage demands.	X	
14. Review and approve plans for meeting County Storage demands		X
15. Produce recommendations for process improvement in backup and recovery for Storage Services assets.	X	
16. Recommend and submit recovery policies/procedures for Storage Services assets.	X	
17. Review and approve recovery policies/procedures for Storage Services assets.		X
18. Produce and submit recommendation on capacity management	X	
19. Review and approve recommendations on capacity management		X
20. Produce and submit plans to add additional Shared Storage	X	
21. Review and approve plans to add additional Shared Storage		X
22. Produce and submit a data management strategy that will make certain that commonly used data has a defined minimum set of characteristics that include the following: • Definition of the data object (what is it?) • Reference (where and how is the data object used?) • Metadata (data object attributes, such as type, size, and range of values) • Ownership and governance (who owns data, definitions, content, and so on?)	X	
23. Review and approve data management strategy		X

Storage Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
24. Implement that strategy using an Information Lifecycle Management (ILM) approach to storing the data. Service shall be delivered for the most prominent applications that benefit from early adoption of ILM.	X	
25. On an initial and ongoing basis, evaluate the County's data to identify redundancies, excess capacity, and opportunities for data consolidation using strategies such as data warehousing and data archiving. This rationalization will reduce the County's data storage costs through the following: • Leveraging centralized hardware • Reducing administrative costs by reducing the number of databases • Providing centralized data repository • Reducing costs by reducing under-utilized storage • Reducing and eliminating autonomous backup and recovery solutions for centrally administered and managed backup and recovery	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
26. Design and Implement recovery processes based on approved policies/procedures	X	
27. Design and Implement Storage management processes based on approved policies/procedures	X	
28. Implement Storage Services Reporting	X	
29. Design and Implement Storage consolidation based on approved recommendations.	X	
30. Deploy, manage, communicate and report on activities related to Storage Services refresh	X	
31. Review and approve Storage refresh report		X
32. Design and Implement Storage provisioning and allocation processes based on approved policies	X	
33. Design and implement capacity management	X	
34. Implement approved Storage Services policies and procedures	X	
35. Implement necessary physical and logical security to protect the County's data (e.g. through access controls, storage network, and host-based allocation controls, SAN zoning and host/array-level logical unit (LUN) masking)	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
36. Provide support, including break-fix, for all Storage Services assets	X	
37. Manage and support the Storage Services	X	
38. Produce and submit monthly Storage Services reports	X	
39. Review and approve monthly Storage Services reports		X
40. Support Storage Services refresh	X	
41. Perform and support media management activities for Storage Services	X	
42. Manage and support the media requests	X	
43. Perform tapes mounts as required	X	

Storage Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
44. Perform special tape shipments as requested	X	
45. Load and manage third-party media as required	X	
46. Prepare and manage media for use by microfiche service	X	
47. Manage and perform file transfers and other data movement activities related to break/fix or consolidation of Storage assets	X	
48. Perform data backups of Storage Services per approved policies and procedures	X	
49. Perform recovery processes on Storage assets	X	
50. Perform storage utilization management	X	
51. Manage and maintain all Storage assets and services	X	
52. Manage and maintain backup media library	X	
53. Manage and maintain the Storage Services Assets	X	
54. Produce and submit Storage Management Reports	X	
55. Review and accept Storage Management Reports.		X

6.9. Managed Print Services

6.9.1. Managed Print Services Overview

This is the section pertains to the Managed Print Services component within the Data Center Framework. The Managed Print Services component applies to all the hardware, software and services needed to maintain and support managed print. Services provided by the Contractor are print and output facilities, print output operations, operating printer devices, distributing printed output, replenishing consumable materials, preparing and managing media for use by microfiche service and repairing printer devices.

6.9.2. Managed Print Service High Level Requirements

6.9.2.1. Maintain reliable Managed Print Operations that allows County business to continue uninterrupted

6.9.2.2. Lower overall Managed Print cost be increasing overall efficiencies

6.9.3. Managed Print Requirements, Roles & Responsibilities

Managed Print Services: Plan, Build and Operate Services Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Managed Print Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Managed Print Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit output management requirements, policies, and procedures including transport, delivery locations and schedule requirements	X	
2. Review and approve output management requirements, policies, and procedures		X
3. Produce and submit automated output distribution requirements	X	
4. Review and approve automated output distribution requirements		X
5. Produce and submit recommendations for using distributed printing methodologies and technologies to update and modernize Managed Print Services.	X	
6. Review and approve recommendations for using distributed printing methodologies and technologies to update and modernize Managed Print Services.		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
7. Design and implement output management requirements, policies, and procedures including transport, delivery locations and schedule requirements	X	
8. Design, test and implement approved automated output distribution requirements	X	
9. Design, test and implement approved recommendations for modernizing the Managed Print Services	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
10. Provide support, including break-fix, for all Managed Print assets		
11. Provide print output (including both paper and microfiche) facilities for the County	X	
12. Perform and manage print output (including both paper and microfiche) distribution and delivery to specified County locations	X	
13. Separate and organize printed output materials (including both paper and microfiche) and place into designated bins at the designated delivery points	X	
14. Store preprinted check stock in a secure document vault in Contractor secured print facility	X	
15. Ensure that output devices are functioning, including performing or coordinating maintenance and meet or exceed Minimum Service Levels	X	
16. Store and manage consumables, such as paper, special forms, check stock, print ribbons, ink, tapes, etc. Ensure that special forms and check stock are current and adequately stocked every Month. Coordinate acquisition of additional materials as needed	X	
17. Provide microfiche services	X	

7. CROSS FUNCTIONAL SERVICES

7.1. Cross Functional Services Overview

This section pertains to the Cross Functional Services Framework. Cross Functional Services consist of the Plan, Build and Operate services that span across all the Service Frameworks. Cross Functional Services are composed of the following components: Security Management; Billing Management; Asset Management; Contract Management; Reporting; Disaster Recovery; Workflow; Capacity Management; Configuration Management; Account Management; Project Management, Quality Assurance; and Transition Services.

Cross Functional Services include IT lifecycle services that Contractor will provide across the County IT Service Frameworks. All requirements, roles and responsibilities described in this Schedule are considered to be within the scope of each IT Service Framework.

7.2. Cross Functional Services High Level Requirements

7.2.1. Contractor shall ensure that IT life cycle and service management functions are included in all IT Service Frameworks

7.2.2. Contractor shall provide IT services that consider an end-to-end enterprise view across all IT Service Frameworks

7.2.3. Contractor shall implement industry best practices process, quality, and project methodologies to align processes to people and technology to fulfill the County's mission

7.2.4. Contractor shall provide a full-time, dedicated Chief Technical Architect who will support the County's architectural planning processes and ensure high standards of technical architecture and integration in new IT solutions implemented by the County

7.2.5. Contractor shall monitor technical trends through independent research; document and report on products and services with potential use for the County.

7.2.6. Contractor shall provide the County insight into future direction, initiatives, and technology road maps of major applications vendors.

7.2.7. Contractor shall provide county government applications software and business experience and expertise – at the enterprise, business group, and departmental levels – to support Applications portfolio planning and strategic planning.

7.3. Security Management Services

7.3.1. Security Management Services Overview

This section pertains to the Security Management Services component within the Cross Functional Framework. Security Management Services consist of the Plan, Build and Operate services that manage and enforce County security policies.

7.3.2. Security Management Services High Level Requirements

7.3.2.1. Contractor shall provide a phased consolidation, centralization, and standardization of security services employing a full-time, redundant set of systems, centralized management and awareness program using an available broadcast medium (e.g., network log-on messages, e-mail lists and help desk on hold recordings) that will lower the County's IT environment security cost.

7.3.2.2. Contractor shall provide the Services and process County Data using the best commercially-available security technologies and methods that meet or exceed requirements within the County Security Policy.

7.3.2.3. Contractor's security services shall include providing a central security organization, performing all necessary security assessments, providing a security plan that conforms to the requirements of local, State, and federal security laws and regulations, developing and maintaining a County-wide security policy and architecture, and performing all necessary security-related audits and reports.

7.3.2.4. Contractor shall provide physical security for all facilities under its management, security awareness and training programs, and operational support of system security processes for the Services.

7.3.2.5. Contractor will design and implement a centralized security system architecture that will facilitate tracking using an online Security Dashboard accessible to the County via a portal. The centralized system shall include:

- Centralized logging, auditing of system event logs and system configurations

- Intrusion detection and prevention

- Perimeter firewall management

- LAN isolation technologies

- Centralized user authentication and authorization services

- Vulnerability assessment

- Security incident tracking and response

- Reporting management that supports policy compliance detection, enforcement, and quick issue and incident remediation

- Periodic network scans and penetration tests

7.3.3.   Security Management Services Requirements, Roles & Responsibilities

The following table identifies Contractor's and County's Plan, Build and Operate requirements, roles and responsibilities that are specific to Security Management Services.

Security Management Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Security Management Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Define County requirements at the enterprise level for all security services (e.g. business, technology strategy, functional, availability, capacity, performance, applications, backup and IT continuity service)		X
2. Produce and submit quarterly updates to security requirements, standards, procedures and policies including regulatory requirements for County approval	X	
3. Review and approve security requirements, standards, procedures and policies for County		X
4. Produce and submit security architecture plans and requirements	X	
5. Review and approve security architecture plans and requirements		X
6. Produce and submit security violation reporting criteria	X	
7. Review and approve security violation report criteria		X
8. Review all security patches relevant to the IT environment and classify the need and speed in which the security patches should be installed	X	
9. Continuously monitor security trends through independent research; document and report on products and services with potential use for County as it aligns with County business and technology strategy	X	
10. Perform feasibility studies for the implementation of new security technologies that best meet County business needs and meet cost, performance and quality objectives	X	
11. Participate in technical and business planning sessions to establish security standards, architecture and project initiatives	X	
12. Conduct technical reviews and provide recommendations for improvements to the infrastructure that increase efficiency and effectiveness of security and reduce costs	X	
13. Establish and maintain list of authorized personnel who may initiate requests to Contractor focal point for off-site tape services		X
14. Produce and submit operational policies and procedures for Security	X	

Security Management Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Management		
15. Review and approve operational policies and procedures for Security Management		X
16. Implement appropriate controls within individual departments which recognize unique privacy issues that must be addressed and safeguarded to insure that individual departmental requirements are met (e.g. HIPAA, HHSA, etc.)	X	
17. Alert the County to security patches that application software vendors recommend for rapid deployment under tested processes and procedures.		
18. Produce and submit Security Management testing and vulnerability analysis plan on a yearly basis	X	
19. Review and approve Security Management testing and vulnerability analysis plan on a yearly basis		
20. Produce and submit policies and procedures for voicemail security	X	
21. Review and approve policies and procedures for voicemail security		X
22. Perform Application security planning for development and integration tasks	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
23. Implement and report results on security management testing and vulnerability analysis	X	
24. Review results security management testing and vulnerability analysis		X
25. Implement operational policies and procedures for security management	X	
26. Design, test and implement approved security architecture	X	
27. Identify relevant and applicable standards and methods to apply to County systems and applications to meet all special statutory and regulatory objectives and requirements		
28. Comply with all statutory requirements regarding systems, including specific regulatory requirements for systems affiliated with the California Law Enforcement Telecommunications System (CLETS) and the FBI Criminal Justice Information Systems (CJIS).		
29. Evaluate risk reduction and cost effectiveness of security processes and procedures		
30. Implement test, evaluation, and re-test methods to prove that implemented security processes and procedures are working as planned		
31. Conduct integration and security testing for all new and upgraded equipment, networks, software or services to include unit, system, integration and regression testing	X	
32. Review all security patches relevant to the IT environment and classify the need and speed in which the security patches should be installed	X	
33. Maintain all documentation required for security audits and internal control and control testing	X	
34. Implement encryption technologies, security monitoring, anti virus programs and relevant patches and upgrades as required by County policies and standards	X	

Security Management Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
35. Design and implement an enterprise-wide virus management program that is integrated with the Help Desk, including centralized logging, signature distribution, patch distribution, client control and anti-virus event logging and signature distribution	X	
36. Design and implement a web-based security dashboard that will display meaningful metrics, aggregated security log data, and enable total IT security awareness of the County's IT security environment	X	
37. Provide information from various frameworks into a central security monitoring system.	X	
38. Provide continuous monitoring, automated alerts, and notifications of virus removals, quarantines, and unknown exceptions and provide the County online access	X	
39. Develop and recommend improvement plans for County facilities as needed to maintain effective physical security	X	
40. Review and approve physical security improvement plans for County facilities		X
41. Implement physical and logical security measures consistent with County security requirements and industry standards (e.g., ISO 17799)	X	
42. Develop and document technical design plans and environment configuration based on County security requirements	X	
43. Review and approve all adjustments to County security policies, regulations and procedures as a result of new service features and components		X
44. Install and configure management tools in such a fashion that security problems, issues and events are proactively identified, reported and resolved	X	
45. Implement preventive measures for proactive monitoring and self-healing capabilities to limit outages due to security breaches that impact service delivery	X	
46. Develop and document security awareness and training programs in conformance with County security requirements	X	
47. Review and approve security awareness training		X
48. Design and implement voicemail security policies and procedures	X	
49. Produce and submit documentation to support Application designs which shall take into consideration County security policies	X	
50. Review and approve documentation to support Application designs for security considerations		X
51. Produce and submit System and Application security procedures	X	
52. Review and approve System and Application security procedures		X
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
53. Perform System access control according to approved policies and procedures	X	
54. Conduct security assessments and report monthly on vulnerabilities and recommended mitigations	X	
55. Maintain systems with specialized security requirements (e.g., Juris,	X	

Security Management Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
CLETS). The CLETS system security shall be maintained by Contractor with oversight by Sheriff as set forth in Exhibit 12.1.1-1		
56. Produce and submit a listing of personnel that have been granted electronic access to County data/Systems maintained by the Contractor	X	
57. Provide and support security analysis and monitoring products into the County's system and network infrastructure	X	
58. Activate a security incident response team to respond to security events, and report events to appropriate security personnel	X	
59. Identify and track database security issues	X	
60. Resolve and report internal security violations	X	
61. Review and approve internal security violation resolution measures		X
62. Resolve and report security violations that originate outside of the hosted network(s) (e.g., denial of service attacks, spoofing, Web exploits)	X	
63. Perform security audits of desktops, servers, networks, and applications on a continuous, rolling basis, using monitoring tools such as network traffic analyzers (e.g. ethereal, etherpeek), network device monitoring (e.g. HP OpenView), device discovery services (e.g. nessus, nmap), and client configuration control agents (e.g. SMS)	X	
64. Conduct scheduled audit review meetings between the Contractor's security officer and the County security officer and related security working group(s)	X	
65. Scan network ports with standard scanning tools (e.g., nessus), with plug-ins included for scanning of known vulnerabilities of COTS application products	X	
66. Review and report unencrypted data transmissions vulnerable to network sniffing and interception	X	
67. Support County requested third party security audits, vulnerability and penetration testing	X	
68. Implement process for automated notification of transfers and termination of End-Users	X	
69. Implement on-line access request process to request and authorize End-User IDs	X	
70. Ensure security of offsite storage for designated media and transport to and from offsite location as required	X	
71. Manage secure file transfers and other secure data movement activities	X	
72. Provide County with a detailed explanation of outages due to security breaches that identify the regional impact, source of breach, and preventative measures being taken to prevent future similar breaches and outages	X	
73. Act as a liaison to County Information Security Working Group (CISWG)	X	
74. Support periodic audits of security practices, process and procedures as required by County	X	
75. Submit authorized End-User list for County portfolio Applications		X
76. Deploy County portfolio Applications based on submitted authorized	X	

Security Management Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
End-User list		
77. Provide security administration, including managing role and end-user database permissions	X	
78. Review the County's security policies annually and work with the County security officer to recommend updates, additions, or changes as the County's working IT environment changes	X	
79. Provide in-depth security training as part of optional training offerings	X	

7.4. Billing Management Services

7.4.1. Billing Management Services Overview

Billing Management services allow the County to accurately chargeback its internal business units for actual usage of IT resources and to receive accurate invoices that meet County requirements.

7.4.2. Billing Management Services High Level Requirements

7.4.2.1. Contractor will provide accurate and timely invoices with an appropriate level of detail for County requirements

7.4.2.2. Contractor will generate electronic billing information that facilitates the County's chargeback activities

7.4.2.3. Contractor will support all activities required to audit, validate, substantiate, and detail its billings

7.4.2.4. Contractor shall enable rapid generation of timely reports and improve accuracy by eliminating the need for manual manipulation or transcription of raw data

7.4.3. Billing Management Requirements, Roles & Responsibilities

The following table identifies the Billing Management requirements, roles and responsibilities associated with Plan, Build and Operate services.

Billing Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Billing Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Identify chargeback and reporting requirements		X
2. Identify monthly invoicing requirements		X
3. Produce and submit recommended monthly invoice/billing report format in accordance with County requirements	X	

Billing Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
4. Review and approve monthly billing report format		X
5. Document and maintain invoicing requirements	X	
6. Participate in, and support, billing audits as requested by the County	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
7. Provide an automated interface with the County's finance system for billing Services	X	
8. Provide an automated interface with the County's chargeback system in accordance with County requirements, including the ability for the County to review the chargeback reports and supporting data online through a Portal without any delays	X	
9. Produce and submit monthly reports (both hardcopy and electronically) detailing all usage and charges	X	
10. Maintain an electronic repository of all Billing Management records (reports, invoices, chargeback, etc.) for the duration of the contract	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
11. Produce and submit to County chargeback reports and monthly invoices	X	

12. On a monthly basis, meet with the County's finance staff to review invoices including:
  o Provide a mock invoice for review and agreement
  o If discrepancies are identified, clarify and resolve them
  o Meet again within a week to reach agreement on the changes or clarifications so the submitted invoice can be signed off
	X	

13. Approve chargeback reports		X
14. Download on a monthly basis all usage and charge information to the County chargeback application	X	
15. Provide invoices per County requirements	X	
16. Document and maintain County chargeback reporting requirements	X	
17. Calculate, report, and chargeback all applicable taxes and provide monthly billing for current and past services as well as track payments and balances	X	
18. Provide the billing data needed to reconcile bills	X	
19. Approve invoices		X
20. Maintain and provide an electronic archive of all billing and its details	X	

7.5.   Asset Management Services

7.5.1.   Asset Management Services Overview

Asset Management services are the activities associated with the asset tracking, pricing, evaluation (technical and costing), selection, acquisition, software license management and ongoing management of new and upgraded service components (e.g. hardware, software, circuits).

7.5.2.   Asset Management Services High Level Requirements

7.5.2.1.   Contractor will acquire and provision all assets required to perform the Services

7.5.2.2.   Contractor shall provide an integrated requisitioning, sourcing, purchasing, and asset tracking system

7.5.2.3.   Contractor will monitor, track, and provide timely reporting on assets throughout their life cycle and provide the County full visibility (e.g., asset, relevant accounting details, other by the contract information required)

7.5.2.4.   Contractor will ensure inventory of assets is maintained and accurate

7.5.2.5.   Contractor will manage all assets, including, but not limited to, ensuring that all assets are appropriately licensed

7.5.2.6.   Contractor will provide Asset Management reports including Software (Desktop Applications Directory and Applications Portfolio) License Compliance, Application and Infrastructure Servers and Personal Computing Assets.

7.5.2.7.   Contractor will work with 3rd-party vendors to optimize the pricing and terms for all 3rd-party assets

7.5.3.   Asset Management Requirements, Roles & Responsibilities

The following table identifies the Asset Management requirements, roles and responsibilities.

Asset Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Asset Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommended asset management monthly report format (e.g., end-user name, department, account code, location, lo-org)	X	
2. Review and approve asset management monthly report format		X
3. Produce and submit recommended Software license monthly report format	X	
4. Review and approve recommended Software license monthly report format		X
5. Produce and submit asset management policies and procedures	X	
6. Review and approve asset management policies and procedures		X
7. Produce and submit Software license management policies and procedures	X	
8. Review and approve Software license management policies and procedures		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**

Asset Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
9. Implement asset management policies and procedures	X	
10. Implement Software License management policies and procedures	X	
11. Implement Software License monthly report	X	
12. Implement asset management monthly report	X	
13. Provide acquisition and tracking capability as required to fulfill County requests.	X	
14. Negotiate, enter into, track and manage all contracts, including licenses, with third-parties as required for the provision of the Services	X	
15. Provide and support an electronic Asset Management system which will include asset auto discovery tools to maintain asset data and user profiles	X	
16. Provide and support an electronic interface to the County's finance and chargeback systems to meet accounting, tracking, and reporting requirements	X	
17. Develop and implement on line access to Asset Management information	X	
18. Implement and support interfaces to feed asset location and financial data, including third party data such as relevant taxation, book and depreciation value data to an online reporting dashboard	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
19. Track and manage all assets provided by the Contractor	X	
20. Conduct periodic audits and provide exception reports resulting from use of asset auto discovery tools	X	
21. Produce and submit monthly reports on assets (both hardcopy and electronically)	X	
22. Produce and submit copies of all third-party contracts, including licenses, upon request of the County	X	
23. Produce and submit monthly software license management report	X	
24. Review and approve monthly software license management report		X
25. Validate compliance with applicable software licensing agreements using automated software tools and manual processes as required	X	
26. Verify installed software for non-networked PCs (that periodically touch the network to check e-mail, for example), while those PCs are in contact with the network.	X	
27. Report any license compliance issues no more than 30 days from the date of the issue	X	
28. Report on contract expirations, license changes/upgrades, etc. in advance to prevent disruptions in service, non-compliance issues, etc.	X	
29. Report any expiration or renewal requirements for assets to allow for planning and mitigation	X	
30. Manage the ordering, procurement and delivery processes in compliance with County procurement and acceptance processes	X	
31. Maintain version control on asset inventory	X	

Asset Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
32. Dispose of assets (e.g. donation, sale, disposal) per County policies and procedures and accounting and financial requirements	X	

7.6. Contract Management Services

7.6.1. Contract Management Services Overview

Contract Management services are the activities associated with the ongoing management of the Agreement and the Contractor's relationship with the County.

7.6.2. Contract Management Services High Level Requirements

7.6.2.1. Contractor will interface, communicate and work with the County to ensure performance of the Agreement.

7.6.2.2. Contractor will assign a full-time contract/subcontract manager to contract to act as the single point of contact for the County on all contractual matters.

7.6.3. Contract Management Requirements, Roles & Responsibilities

The following table identifies the Contract Management Requirements and responsibilities.

Contract Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Contract Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit Contract Management policies and procedures	X	
2. Review and approve Contract Management policies and procedures		X
3. Produce and submit an overall Application Services measurement plan to complement the MASLs, at no additional charge to the County. The measurement plan will collect key metrics to enable the County and the Contractor to identify productivity gains, better manage the services, and provide information for continuous improvement.	X	
4. Review and approve Application Services measurement plan		X
5. Produce and submit a high-level business case and cost estimate and present them for approval and funding when there is a probability that a package upgrade could provide considerable value to the County	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
6. Implement Contract Management policies and procedures	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
7. Support Contract Management policies and procedures	X	

Contract Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
8. Produce and submit a weekly program status report	X	
9. Produce and submit a monthly program status report	X	
10. Conduct monthly program status reviews with the County to include providing status on the Contractor's achievement of the contractual objectives and to receive feedback	X	
11. Conduct quarterly reviews of adherence to standards and compliance with the County policies and schedules	X	
12. Produce and submit descriptions of contract issues and/or recommended contract change orders	X	
13. Review and approve contract change orders		X
14. Present monthly executive summary of performance to the County's CIO and senior managers to include status, specific issues, recommended solutions and a view of planned activities.	X	
15. Provide program performance metrics electronically and in hard copy to designated County staff members	X	
16. Provide the County with weekly status updates to apprise relevant parties on the status of backlogged work requests and expected resolution dates	X	
17. Assist in planning technology transformation, projects, and equipment replacement to minimize the impact on the County's yearly operations budget	X	
18. Manage relationship contact points with support partners and third-party providers to deliver a single POC for the processing and resolution of applications issues and problems	X	
19. Assist the County in evaluating actual performance versus budget by providing timely cost data, including: ▪ Assist the County in developing and executing routine reports that will allow insight into costs associated with the contract. ▪ Assist the County to determine if chargeback allocations to business groups are correct and to make adjustment to the allocations if necessary	X	
20. Assist the County in the development of their yearly operation budget by providing: ▪ Current, detailed, and accurate information relating to past operations ▪ Assistance in costing and balancing the implementation of major initiatives ▪ Assistance in spreading the costs of these major initiatives over multiple budget cycles ▪ Technical support to determine the impact of changes in technology on costs. ▪ Analysis of capacity use and performance ▪ Identification of technical solutions for the reduction of operational costs	X	
21. Produce and submit updates to the County Standards and Procedures Manual	X	
22. Review and approve updates to the County Standards and Procedures Manual		X

7.7. Reporting Services

7.7.1. Reporting Services Overview

Reporting services are the activities associated with the production and submission of designated reports and deliverables as described in this SOW, the MASLs and Schedule 5 of the Agreement. In addition, Contractor shall report system management information (e.g., performance metrics, and System accounting information) to the County.

7.7.2. Reporting Management Services High Level Requirements

7.7.2.1. Contractor will provide accurate and timely reporting on performance, trends, issues, assets, and other topics as required by the County

7.7.2.2. Contractor will proactively work with the County to ensure that all reports and deliverables are comprehensive and formatted to meet County requirements

7.7.2.3. Contractor will ensure that all reports are available to the County in both hardcopy and electronic formats

7.7.3. Reporting Requirements, Roles & Responsibilities

The following table identifies the Reporting Services requirements, roles and responsibilities.

Reporting: Plan, Build and Operate Requirements, Roles and Responsibilities

Reporting: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Define reporting requirements, format and frequency		X
2. Assist the County to identify recurring reporting and format requirements to support the County's needs for information	X	
3. Produce and submit Reporting operational policies and procedures based on County requirements	X	
4. Review and approve Reporting operational policies and procedures based on County requirements		X
5. Produce and submit recommendations for measurement and reporting of MASLs	X	
6. Review and approve recommendations for measurement and reporting of MASLs		X
7. Produce and submit required County reports	X	
8. Review and approve required County reports		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**

Reporting: Plan, Build and Operate Requirements, Roles and Responsibilities		
9. Design and implement required County reports	X	
10. Design and implement approved recommendations for measurement and reporting of MASLs	X	
11. Implement Reporting operational policies and procedures	X	
12. Design and implement an automated notification system that periodically reminds the report owner of upcoming submission dates. A summary of reports due within 30, 60, and 90 days will also be provided	X	
13. Design and implement a secure portal that will provide the County access to web-based, self-service, personalized customer displays of key IT and telecommunications management information	X	
14. Design and implement an automated data collection and reporting system that will support the County of San Diego's yearly budgeting process, and give the County insight into the cost details of yearly operations	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
15. Produce and submit all reports and other written deliverables specified in Schedule 5 or Schedule 4.3	X	
16. Review and approve all reports and other written deliverables specified in Schedule 5 or Schedule 4.3		X
17. Provide the County access and input capabilities to Break-Fix incident and Problem tracking system to allow for Break-Fix incident/Problem monitoring and ad hoc reporting	X	
18. Provide status report detailing the root cause of and procedure for correcting recurring Problems and applicable Break-Fix incidents until closure as determined by the County	X	
19. Provide management reports to County on the progress of the all refresh plans	X	
20. Report on service performance improvement results	X	
21. Provide County configuration management reports	X	
22. Measure and Report monthly on each MASL	X	
23. Produce and submit monthly reporting on Applications, showing costs broken down by Plan, Build and Operate. The Operate costs should be broken down into the categories unscheduled maintenance, scheduled maintenance, administration, user support, and development and integration	X	
24. Produce and submit trend information on defects, Work Requests and estimate accuracy	X	

7.8. Disaster Recovery Services

7.8.1. Disaster Recovery Services Overview

This section pertains to the Disaster Recovery (DR) component within the Cross Functional Framework. The Disaster Recovery (DR) Services component encompasses all services, assets and facilities required to meet County requirements for

Disaster Recovery (DR). The recovery time objectives (RTO) that shall be met by the Contractor are 48 hours for Priority 1 Applications and 72 hours for Priority 2 Applications. Application processing capability shall be restored within these timeframes, and restored data shall be no older than 28 hours prior to the disaster. In order to meet RTO, production application processing shall be split between the two Data Centers.

Contractor shall provide the County a complete disaster recovery plan, for the County's review and approval, to ensure the continuing availability of the Services during any event that would, under the circumstances, otherwise affect Contractor's ability to deliver the Services. The County may (at any time, and from time to time) identify and notify the Contractor in writing of other items, in addition to those described herein, that the County deems appropriate for inclusion in the disaster recovery plan. The Contractor shall promptly review and discuss with the County all such additional items and, unless the County agrees otherwise in writing, promptly revise the disaster recovery plan to properly address such additional items. In addition, prior to each anniversary of the first Cutover Date, the Contractor shall revise the disaster recovery plan as appropriate to reflect any changes to the County's IT environment, or related requirements, and submit such revised disaster recovery plan to the County for review, comment, and approval.   Commencing not later than on the Cutover Date for each Service Framework, Contractor shall implement the plan and provide the County disaster recovery services so as to ensure the continuing availability of all Services related to such Service Framework.

7.8.2. Disaster Recovery Service High Level Requirements

7.8.2.1.   Promote disaster recovery and business continuity (BC) at the County in the event of a disaster

7.8.2.2.   Provide recovery and resumption of County Priority 1 Applications, as defined in MASL Break-Fix, within 48 hours

7.8.2.3.   Provide recovery and resumption of County Priority 2 Applications, as defined in MASL Break-Fix, within 72 hours.

7.8.2.4.   Prevent data loss of no greater then 28 hours

7.8.2.5.   Test DR preparedness on a yearly basis to ensure readiness

7.8.3. Disaster Recovery Service Environment

7.8.3.1.   Contractor Facilities

The DR Services will be performed across both active Contractor Data Centers, and other facilities as required.

7.8.4. Disaster Recovery Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Disaster Recovery Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Disaster Recovery Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit a Disaster Recovery (DR) plan that meet County requirements	X	
2. Review and approve a DR plan that meet County requirements		X
3. Produce and submit data recovery plan consistent with the County's business requirements		
4. Review and approve data recovery plan		
5. Produce and submit at the start of each Contract Year a revised DR Plan to continually meet County objectives	X	
6. Review and approve the yearly DR Plan		X
7. Produce and submit a yearly DR test plan	X	
8. Approve the DR/BC test		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
9. Design and implement DR plan	X	
10. Design and implement data recovery plan	X	
11. Coordinate the DR plans with group Business Continuity (BC) plans to address any potential disconnects or misunderstanding	X	
12. Perform yearly DR test	X	
13. Submit yearly DR test results to the County	X	
14. Review and approve yearly DR test results		X
15. Maintain and document requirements for off-site data storage	X	
16. Review documentation for off-site data storage		X
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
17. Provide secure offsite storage for designated media and transport media to offsite location as required (include handling, storing, shipping, and receiving tape media) – transport tapes in environmentally controlled vehicles operated by bonded personnel. The off-site facility will have complete fire protection and multiple layers of physical security to prevent unauthorized access	X	
18. Ensure archived data is available for use in disaster recovery operations	X	
19. Provide off-site backup media storage	X	
20. Establish and maintain contracts for hot-site or cold-site availability as required, coordinate disaster recovery exercises to ensure readiness, and perform required recovery	X	
21. Promote DR and use of BC by meeting with the County's CIO, IT governance committees, the business managers, and the departments to provide appropriate communication during any DR operation	X	

Disaster Recovery Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
22. Perform scheduled DR tests per County policies, requirements and the DR Plan	X	
23. Track and report DR test results to the County	X	
24. Approve DR testing results		X
25. Perform corrective action identified during the DR test and provide on going status until completion	X	
26. Provide a written DR test and corrective action report to the County by a mutually agreed upon date each year	X	
27. Execute DR Procedures when directed by an authorized representative of the County	X	
28. Provide DR recovery within 48 hours from the time a disaster is declared for Priority 1 Applications	X	
29. Provide DR recovery within 72 hours from the time a disaster is declared for Priority 2 Applications	X	

7.9. Workflow Services

7.9.1. Workflow Services Overview

Workflow Services encompass all of the systems and services required to: process requests for service from the County; coordinate Contractor activities to provide the Services; and coordinate with 3rd-parties as required to provide the Services.

7.9.2. Workflow Services High Level Requirements

7.9.2.1. Contractor will provide efficient and effective processing of County requests for service

7.9.2.2. Contractor will work with the County to develop and implement workflow policies and procedures that provide appropriate efficiency, security, and control

7.9.2.3. Contractor will link processes by automating functions using a common toolset and a framework of IT Infrastructure Library (ITIL)-based integrated processes

7.9.2.4. Contractor will coordinate its own, Subcontractor, and 3rd-party resources to provide high-quality services

7.9.2.5. Contractor will provide access to County end-users and management on the status (both current and historical) of requests for service

7.9.3. Workflow Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Workflow: Plan, Build and Operate Requirements, Roles and Responsibilities

Workflow: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
• Produce and submit recommendations for Workflow operational policies and procedures	X	
• Review and approve recommendations for Workflow operational policies and procedures		X
• Produce and submit closed loop methodology for Workflow entry, tracking and closing of the Work Request	X	
• Review and approve closed loop methodology for Workflow entry, tracking and closing of the Work Request		X
• Produce and submit recommended monthly report format for requests for service	X	
• Review and approve monthly report format for requests for service		X
• Produce and submit monthly reports detailing all requests for service (both hardcopy and electronically)	X	
• Approve Break-Fix and Problem management policies and procedures		X
• Produce and submit escalation/notification policies and procedures	X	
• Review and approve escalation/notification policies and procedures		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
• Design and implement closed loop methodology for Workflow entry, tracking and closing of the Work Request	X	
• Implement approved Workflow operational policies and procedures	X	
• Implement monthly reporting	X	
• Implement and maintain a service ordering process that clearly defines how to order, change or delete Services	X	
• Establish and implement adequate Break-Fix Incident/Problem Ticketing, tracking, workflow, escalation, communication and reporting processes to ensure the MASL and other County requirements are met	X	
• Ensure Break-Fix Incident resolution activities conform to defined change control procedures	X	
• Perform integration tasks for all System Break-Fix incidents	X	
• Develop and execute procedures for conducting End-User satisfaction surveys according to MASLs and Schedule 7.2 (End User Satisfaction Surveys	X	
• Review and approve procedures for conducting End-User satisfaction surveys		X
• Escalate and resolve issues with development, integration and service delivery teams	X	
• Implement escalation/notification policies and procedures	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**

22. Ensure that all questions, Help Desk requests, and Work Requests are routed to the appropriate parties for timely resolution	X	
23. Provide status, upon request of the County, of all questions, Help Desk requests, and Work Requests	X	
24. Ensure applicable Work Requests are properly authorized	X	
25. Manage entire Break-Fix Incident/Problem lifecycle including detection, diagnosis, County status reporting, repair and recovery	X	
26. Provide notice to affected End-Users of any service interruptions to allow County planning and mitigation	X	
27. Participate in Problem review sessions and provide listing and status of Problems categorized by Problem impact	X	
28. Authorize closure of all Work Requests		X
29. Manage efficient workflow of Break-Fix incidents including the involvement of third party providers (e.g., vendors, public carriers)	X	
30. Categorize Break-Fix incident/Problem classification by priority	X	
31. Process all Work Requests	X	
32. Produce and submit to County Break-Fix Incident and Problem management policies and procedures	X	
33. Support escalation/notification policies and procedures	X	

7.10. Capacity and Performance Management Services

7.10.1. Capacity and Performance Management Services Overview

Capacity and Performance Management services include all systems and services relating to optimizing the efficiency, effectiveness, and performance of the County's systems.

7.10.2. Capacity and Performance Management Services High Level Requirements

7.10.2.1. Contractor will monitor and manage systems to leverage and optimize the County's IT investments

7.10.2.2. Analyze historical resource usage of tracking and trending by CPU, memory, input/output, and storage

7.10.2.3. Contractor will monitor system use and capacity by analyzing historical resource use trends for the 12 prior months and forecast short-term and long-term infrastructure resource usage and performance

7.10.2.4. Contractor will identify and implement improvements to better leverage existing capacity

7.10.2.5.   Contractor will communicate potential capacity or performance issues to the County in advance, and implement approved solutions in a timely manner

7.10.3.   Capacity and Performance Management Service Requirements, Roles & Responsibilities

The following table identifies the general Requirements, roles and responsibilities associated with Plan, Build and Operate services.

Capacity and Performance Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Capacity and Performance Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Conduct capacity planning activities that incorporate all Systems, sub-systems, and software, workload balancing, and resource allocation	X	
2. Recommend changes to capacity to improve service performance	X	
3. Approve capacity related recommendations		X
4. Produce and submit recommendations for changes to optimize capacity management	X	
5. Review and approve changes to optimize capacity management	X	
6. Produce and submit projections prior to the beginning of each contract year regarding estimated usage and loading for all Service Frameworks based on historical trends, anticipated new projects and decommissioning of systems, etc.	X	
7. Develop and maintain a capacity plan to meet the County's existing and future needs. The process components of the capacity Management plan shall include: ▪ Application sizing ▪ Resource forecasting ▪ Demand forecasting ▪ Modeling ▪ Performance monitoring ▪ Workload monitoring	X	
8. Perform Application capacity and performance planning, incorporating business projections provided by the County	X	
9. Perform capacity and performance planning on an ongoing basis when new business and application growth is anticipated, when changes to existing business requirements are anticipated or occur, or when system configuration changes are performed	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
10. Implement comprehensive capacity management planning process	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
11. Maintain capacity levels to optimize use of existing IT resources and	X	

Capacity and Performance Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
minimize County costs to deliver Services in accordance with the MASLs		
12. Monitor and manage capacity in all Service Frameworks to maximize performance and efficiency, and to minimize service disruptions	X	
13. Assess impact/risk and cost of capacity changes and submit mitigation recommendations	X	
14. Continually monitor IT resource usage to enable proactive identification of capacity and performance issues	X	
15. Capture trending information and forecast future County capacity requirements based on County defined thresholds	X	
16. Assess capacity impacts when adding, removing or modifying Applications	X	
17. Assess Break-Fixes and incidents/Problems related to throughput performance	X	
18. Recommend and perform approved DBMS tuning changes	X	
19. Conduct periodic database reorganizations as indicated by usage and performance	X	
20. Define and execute database performance and tuning scripts and keep database running at optimal performance for County's workload	X	
21. Implement and administer appropriate database management tools across all database instances	X	

7.11. Configuration Management Services

7.11.1. Configuration Management Services Overview

Configuration Management services are the activities associated with the recording, tracking, updating and dissemination of County configurations for all hardware and software assets.

7.11.2. Configuration Management Services High Level Requirements

7.11.2.1. Contractor will monitor, optimize, maintain, document, and report on all County hardware and software configurations, including but not limited to new releases and versions, patches, and bug fixes.

7.11.2.2. Contractor will identify configuration items, control and manage changes to configuration items, provide status accounting of those changes, verify functional and physical characteristics of configuration items, release and deliver configuration items

7.11.2.3. Contractors will perform configuration identification, control, status accounting, audits and release management according to County policies and procedures

7.11.2.4. Contractor will standardize change management technologies for Service Frameworks as defined and approved by the County.

7.11.2.5. Contractor will maintain all hardware and software within one release of such hardware and software manufacturers' latest release, unless otherwise approved by the County

7.11.3. Configuration Management Requirements, Roles & Responsibilities

The following table identifies the general requirements, roles and responsibilities associated with Plan, Build and Operate services.

Configuration Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Configuration Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit configuration management policies, procedures and policies	X	
2. Review and approve configuration management policies, procedures and standards		X
3. Produce and submit recommendations for configuration changes	X	
4. Review and approve configuration changes		X
5. Monitor vendor announcements regarding software upgrades, patches, problems and published solutions, provide impact analysis and propose installation plans for announce fixes	X	
6. Recommend which applications packages should be regularly reviewed for patches or version release upgrades and review this list per a defined schedule	X	

7. Provide release and upgrade management per the following steps:
    a. Determine vendor package classification, whether commercial-off-the-shelf, ERP, or third-party
    b. Review contractual obligations for application support from current application vendors
    c. Obtain certification and schedule of current release support
    d. Discuss integration with upcoming IT strategic initiatives
    e. Receive monthly input from the patch or upgrade management team for new release requirements and present the requirements to the County for approval and acceptance.
    f. Once the IT governance groups accept the business case and approve the strategy plan, consult the County for project planning and scheduling
	X	

8. Identify and report when patches or version-release upgrades are available for Applications and determine which functionalities are newly available as a result of the upgrade or which system issues are addressed by it, particularly when this improves customer ease of use	X	

Configuration Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
9. Implement and maintain configuration management policies and procedures	X	
10. Establish a Change and Release Control Board (CRCB) that will approve CM policies and their inclusion in standards and procedures in the County Standards and Procedures Manual, and will approve or delegate approval of changes and releases of updates	X	
11. Participate in Change and Release Control Board (CRCB) and review and approve CRCB activities and decisions		X
12. Select, install and maintain configuration management tools	X	
13. Ensure that change control and notification processes are followed for installations, upgrades and adjustments to components, software and County processes.	X	
14. Establish appropriate authorization controls for modifying configuration items and verify compliance with software licensing	X	
15. Establish guidelines for physical and logical separation between development, test and production and the process for deploying and regressing of configuration items	X	
16. Establish configuration baselines as reference points for rebuilds, and providing ability to revert to stable configuration states	X	
17. Establish process for verifying the accuracy of configuration items; adherence to configuration standards, management process and the identification of process deficiencies	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
18. Perform configuration management	X	
19. Install manufacturer field change orders, service packs, firmware, and software maintenance releases, etc.	X	
20. Perform configuration management activities throughout the system life-cycle	X	
21. Perform configuration management activities throughout the development life cycle	X	
22. Perform configuration management and change management activities related to integration and testing	X	
23. Perform product patch, "bug fix," service pack installation or upgrades to the current installed version	X	
24. Review configuration management results		X
25. Maintain master copies of new versions in a secured software library and update configuration databases	X	
26. Administer the version control system as it relates to release management of County Applications	X	
27. Ensure that inventory and configuration management records are maintained and that all updates to County and Contractor records are reflected	X	
28. Provide document version control for all documentation for which Contractor is responsible	X	

Configuration Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
29. Inform the County of changes through the weekly change and release control meetings and periodic integrated change status reporting. Each change request shall identify other related change requests to facilitate integrated reporting.	X	

7.12. Account Management Services

7.12.1. Account Management Services Overview

Account Management services provide for the consolidation and simplification of account administration across the Service Frameworks for the County user.

7.12.2. Account Management Services High Level Requirements

7.12.2.1. Maintain a single point of contact via the Help Desk for all End-User account authentication and authorization activities including account creation, password reset, account deletion or data permission setting.

7.12.2.2. Implement and maintain a solution to synchronize accounts across the enterprise and across disparate systems for users. This uniformity will allow account management across the enterprise, enable administrators to synchronize accounts and passwords and to provide role-based provisioning

7.12.2.3. Reduce the number of End-User accounts a single End-User requires to access business applications

7.12.3. Account Management Requirements, Roles & Responsibilities

The following table identifies the general requirements, roles and responsibilities associated with Plan, Build and Operate services.

Account Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Account Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommended processes for Account Management authentication and authorization	X	
2. Review and approve processes for Account Management authentication and authorization		X
3. Produce and submit escalation procedures for quick termination	X	
4. Review and approve escalation procedures for quick termination		X
5. Produce and submit End-User Account Management architecture	X	
6. Review and approve End-User Account Management architecture		X
7. Produce and submit End-User account consolidation plan	X	

Account Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
8. Review and approve End-User account consolidation plan		X
9. Produce and submit the format for a report detailing all County End-User accounts and End-User data permissions	X	
10. Review and approve the format for a report detailing all County End-User accounts and End-User data permissions		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
11. Implement systems to centrally manage and maintain Account Management datum and activities	X	
12. Implement approved processes for Account Management authentication and authorization	X	
13. Implement reports detailing all County End-User accounts and End-User data permissions	X	
14. Implement End-User account consolidation plan	X	
15. Analyze account management architecture and the access control systems of the County's business applications, and develop and implement an End-User Account Consolidation Plan and End User Account Management Architecture that will provide a platform for account synchronization across the enterprise and across disparate systems	X	
16. Implement End-User Account Management Architecture	X	
17. Implement escalation procedures for quick termination	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
18. Centrally maintain End-User accounts	X	
19. Perform End-User account maintenance to include account creation, deletion or modification	X	
20. Perform End-User account password resets	X	
21. Perform End-User authorized data permission requests	X	
22. Facilitate the receipt and tracking of requests for End-User account activation, changes and terminations	X	
23. Facilitate the creation, change and deletion of End-User accounts	X	
24. Coordinate as necessary with other specialized areas to manage End-User accounts	X	
25. Maintain Access Control Lists (ACL) in accordance with policies	X	
26. Provide report detailing all County End-User accounts and End-User data permissions on a monthly basis	X	
27. Provide an auditable record of security modifications and produce reports and notifications of end-user access modifications, transfers, and terminations	X	
28. Provide support, including break-fix, for all Account Management services	X	
29. On an annual basis, update the End-User Account Consolidation Plan to reflect progress toward reduction of User IDs and credentials, and to make recommendations for implementation of new technologies within the Account Management Architecture	X	

7.13. Project Management Services

7.13.1.   Project Management Services Overview

Project Management services include the provision of standardized and industry accepted methodologies for project planning, tracking, management and reporting for all Service Frameworks other than Applications Services.

7.13.2.   Project Management Services High Level Requirements

7.13.2.1.   Contractor will provide qualified program and project management resources with relevant background and experience including PMI certification

7.13.2.2.   Contractor will implement, with County approval, a standardized project management methodology that incorporates industry best practices. This methodology will be used by the Contractor in providing all of the Services

7.13.3.   Project Management Requirements, Role and Responsibilities

The following table identifies the general requirements, roles and responsibilities associated with Plan, Build and Operate services.

Project Management: Plan, Build and Operate Requirements, Roles and Responsibilities

Project Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit recommendations for standard project management tools, reports, and artifacts	X	
2. Review and approve standard project management tools, reports, and artifacts		X
3. Produce and submit recommendations for project-specific tools and artifacts	X	
4. Review and approve project-specific tools and artifacts		X
5. Produce and submit resource-loaded project plans for all projects	X	
6. Review and approve resource-loaded project plans for all projects		X
7. Produce and submit project status reports on no less than a monthly basis	X	
8. Provide a range of training options, including attendance at seminars, user groups, and vendor training		
9. Produce and submit project management policies and procedures	X	
10. Review and approve project management policies and procedures		X
11. Recommend business process reengineering methodologies	X	
12. Assess and approve business process re-engineering methodologies		X

Project Management: Plan, Build and Operate Requirements, Roles and Responsibilities		
13. Identify opportunities for business process improvements	X	
14. Provide industry knowledge applicable to County departmental business to identify opportunities for business process reengineering and Application development and integration/modification	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
15. Implement County authorized Project Management discipline	X	
16. Work in conjunction with the County's training and development resources to provide a common look and feel to training delivery methods	X	
17. Implement and manage County-authorized Project Management tools and processes based on industry standards and best practices	X	
18. Develop and maintain a training course catalog in cooperation with County HR and the business units to provide end users access to training so they can develop the necessary skills to fulfill their responsibilities	X	
19. Implement approved project management policies and procedures	X	
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
20. Support project management policies and procedures	X	
21. Provide high quality project management for all initiatives and projects undertaken as part of the Services	X	
22. Participate in Program management and Project management activities as required to insure successful work efforts		X
23. Facilitate project status reviews with County management and staff on no less than a monthly basis	X	
24. Distribute the standard project processes, templates, or other vehicles, to all stakeholders to collect relevant project operational and performance data	X	
25. Support the County's Verification & Validation activities including assisting in identifying errors, risk factors, omissions, discrepancies, constraints, performance and security problems, and other obstacles in project implementations	X	
26. Provide local venues for training, particularly for Cross-Functional Services training or special purpose training when delivering training to users in their environment is not practical (e.g., when providing training on new systems or applications for which a computer laboratory type environment is necessary and will be leveraged across many training sessions)	X	

7.14.   Quality Assurance Services

7.14.1.   Quality Assurance Services Overview

Quality Assurance (QA) Services include the systems and services required to ensure high quality performance of the Services. Quality Assurance Services will provide Plan, Build and Operate services for a Root Cause Analysis (RCA) process. The

RCA process will diagnose, analyze, recommend, and take corrective measures to prevent recurring Problems and/or trends.

      7.14.2.   Quality Assurance Services High Level Requirements

      7.14.2.1.   Contractor will utilize oversight and assurance resources, policies, procedures, and other means to provide high-quality performance of the Services

      7.14.2.2.   Contractor shall deliver a Quality Assurance program that is compliant with the International Organization for Standardization (ISO) 9001-2000 quality model, Institute of Electrical and Electronics Engineers (IEEE) processes and standards, and Capability Maturity Model® Integration (CMMI) Level 3 standards.

      7.14.2.3.   Contractor will work collaboratively with the County to ensure the most efficient and effective use of QA resources and processes

      7.14.3.   Quality Assurance Services Requirements, Roles and Responsibilities

      The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

      Quality Assurance Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Quality Assurance Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit QA Services policies and procedures	X	
2. Review and approve QA Services policies and procedures		X
3. Produce and submit policies and procedures for Root Cause Analysis (RCA)	X	
4. Review and approve policies and procedures for Root Cause Analysis (RCA)		X
5. Produce and submit procedures for process improvement	X	
6. Review and approve procedures for process improvement		X
7. Keep informed of changing audit requirements and changes in laws that affect scripts and tools used to comply with them	X	
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
8. Implement QA Services policies and procedures	X	
9. Implement policies and procedures for Root Cause Analysis (RCA)	X	
10. Implement procedures for continuous process improvement based on best practices and industry standard methods for delivering IT service management to optimize the County's enterprise solution	X	
11. Implement a total quality management plan integrated with the quality assurance plan	X	

Quality Assurance Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
12. Perform internal QA activities to ensure a high-level of performance and quality in all Service Frameworks	X	
13. Audit Contractor Operations and Maintenance activities for compliance with Operational policies & procedures		X
14. Produce and submit results of internal audits (self assessments) relating to the County's service frameworks	X	
15. Review and approve internal audit findings (self assessments)		X
16. Incorporate audit findings into County Service frameworks as necessary to maintain compliance	X	
17. Recommend resolutions to address recurring Problems or Failures	X	
18. Review and approve resolutions to address recurring Problems or Failures		X
19. Track and report recurring Problems or Failures and provide associated consequences of Problems if there is a business impact to the County	X	
20. Perform root cause analysis of Break-Fix incidents, document findings and take corrective actions for in scope services. Resolve Problem and/or substantiate that all actions have been taken to prevent future reoccurrence.	X	
21. Ensure that recurring Problems which meet defined criteria are reviewed using root cause analysis processes	X	
22. Routinely assess customer satisfaction at program and service element levels using automated survey tool	X	
23. Initiate additional survey processes as required to measure Contractor's performance rating.		X
24. Report results and trend analysis of customer satisfaction surveys with corrective action plans, as needed, in the monthly status report	X	
25. Periodically audit selected functions to verify that established policies and procedures are being followed and, if variances are noted, recommend corrective actions.	X	
26. Perform periodic internal audits to check that standards are being followed.	X	

7.15. Transition Services

7.15.1. Transition Services Overview

Transition Services include the Plan, Build, and Operate activities required to transition the County successfully, in a timely manner with minimal operational impacts, to the Contractor's facilities, resources, systems, and services.

7.15.2. Transition Services High Level Requirements

7.15.2.1.   Contractor will leverage its experience in conducting transitions to develop complete and comprehensive transition plans with minimal risk (including contingency plans)

7.15.2.2.   Contractor will provide appropriate facilities, resources, systems, and services to facilitate the transition of County Services with minimal operational impacts

7.15.3.   Transition Services Requirements, Roles and Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Transition Services: Plan, Build and Operate Requirements, Roles and Responsibilities

Transition Services: Plan, Build and Operate Requirements, Roles and Responsibilities		
Plan Requirements, Roles and Responsibilities	**Contractor**	**County**
1. Produce and submit Transition Plan	X	
2. Review and approve Transition Plan		X
Build Requirements, Roles and Responsibilities	**Contractor**	**County**
3. Implement approved Transition Plan	X	
4. Provide weekly status reports on Transition Plan execution	X	
5. Review weekly status reports on Transition Plan execution		X
Operate Requirements, Roles and Responsibilities	**Contractor**	**County**
6. Implement and support Transition Plan	X	
7. Perform Services in accordance with MASLs and transition MASLs.	X	
8. Coordinate and collaborate with third-party service providers to minimize service impacts and expedite the transition to Contractor Services	X	

8.   MINIMUM ACCEPTABLE SERVICE LEVELS (MASLS)

8.1.   MASL Overview

Contractor shall, at a minimum, perform the Services in accordance with the MASLs.   Each MASL has been created to identify key performance measures that will be used to evaluate Provider's delivery of the requested Services. The overriding goal in developing MASLs is to support the County's desire to manage Contractor by monitoring and measuring performance on the County's most-important business requirements.   The County expects that new MASLs may be added to reflect changing or new business requirements.   The County expects continuous improvement in Contractor's provision of Service and, therefore, expects to review MASLs at least yearly and, where appropriate, to adjust the MASLs to reflect continuous improvement in Contractor's provision of Service.

8.2. MASL Weighting Factor Summary

The Contractor is required to deliver services which meet or exceed MASL requirements.

The MASLs are summarized below. MASL Weighting Factors apply as indicated in the summary chart (and per the Fee Reductions in Schedule 16.8), with different Weighting Factors applicable during transition as the Contractor assumes responsibility for the Service Frameworks during Transition. The County may adjust Weighting Factors in accordance with Schedule 16.8.

No.	MASL Title	Weighting Factors				
		After Cutover of the Help Desk Service Framework	After Cutover of the Applications Service Framework	After Cutover of the Desktop Service Framework	After Cutover of the Network Service Framework	After Cutover of all Service Frameworks. (including Data Center Service Framework)
1	Call Waiting	25.0%	4.0%	2.0%	2.0%	1.50%
2	Call Waiting	25.0%	4.0%	2.0%	2.0%	1.50%
3	Break Fix Resolution Confirmation Notice	25.0%	4.0%	2.0%	2.0%	1.50%
4	Call Abandonment	25.0%	4.0%	2.0%	2.0%	1.50%
5	Password Resets					1.0%
6	Password Resets					1.0%
7	Call Pickup	25.0%	4.0%	2.0%	2.0%	1.0%
8	Call Pickup	25.0%	4.0%	2.0%	2.0%	1.0%
9	Overall System Availability				1.0%	14.0%
10	System Availability – Internet/Intranet Access				1.0%	1.0%
11	Transaction Response Time (Server Systems - Local Networks)				1.0%	1.0%
12	Transaction Response Time (Server Systems - Local Networks)				1.0%	1.0%
13	Transaction Response Time (Server Systems - Across WAN)				1.0%	1.0%
14	Transaction Response Time (Server Systems - Across WAN)				1.0%	1.0%
15	Transaction Response Time (E-Mail System)				1.0%	1.0%
16	Transaction Response Time (Internet/Intranet Systems)				1.0%	1.0%
17	Transaction Response Time (Internet/Intranet Systems)				1.0%	1.0%
18	Back-ups (Production Environment)					1.0%
19	Back-ups (Test Servers)					0.50%
20	Voice Sys Call Blocking	25.0%	4.0%	4.0%	4.0%	4.0%
21	System Availability Mainframe					3.0%
22	System Availability AS400/Others					3.0%
23	System Availability- VAX					3.0%
24	System Availability- Mid Range E10K					2.0%
25	On-line Transaction Response Time				1.0%	1.0%
26	On-line Transaction Response Time				1.0%	1.0%
27	System File Restoration					2.0%

Schedule 4.3 – Operational Services

No.	MASL Title	Weighting Factors				
		After Cutover of the Help Desk Service Framework	After Cutover of the Applications Service Framework	After Cutover of the Desktop Service Framework	After Cutover of the Network Service Framework	After Cutover of all Service Frameworks. (including Data Center Service Framework)
28	System File Restoration					2.00%
29	Output Delivery - 7:30am - 3:30pm					1.5%
29	Output Delivery - 3:30pm - 5:30pm					1.5%
30	Back-up Completion					1.0%
31	System Availability – Application Servers					2.00%
32	System Availability – Infrastructure Servers					2.00%
33	System Availability - SAN Servers					2.00%
34	Break Fix -Test Servers					0.50%
35	Low Risk Work Request Budget Performance		6.00%	4.00%	4.00%	1.0%
36	Low Risk Work Request Schedule Performance		6.00%	4.00%	4.00%	1.0%
37	Medium Risk Work Request – Budget Performance		6.00%	4.00%	4.00%	2.00%
38	Medium Risk Work Request – Schedule Performance		6.00%	4.00%	4.00%	2.00%
39	High Risk Work Request – Budget Performance		6.00%	4.00%	4.00%	3.00%
40	High Risk Work Request – Schedule Performance		6.00%	4.00%	4.00%	3.00%
41	BF_Consolidated_Priority_1.a - Threshold		10.00%	10.00%	8.00%	7.00%
42	BF_Consolidated_Priority_1.b - Threshold		8.00%	8.00%	6.00%	5.00%
43	BF_Consolidated_Priority_1.c - Average		6.00%	6.00%	4.00%	2.00%
44	BF_Consolidated_Priority_2.a - Threshold		8.00%	8.00%	8.00%	6.00%
45	BF_Consolidated_Priority_2.b - Threshold		6.00%	6.00%	6.00%	4.00%
46	BF_Consolidated_Priority_2.c - Average		4.00%	4.00%	4.00%	2.00%
47	BF_Consolidated_Priority_3.a - Threshold		6.00%	6.00%	6.00%	4.00%
48	BF_Consolidated_Priority_3.b - Threshold		4.00%	4.00%	4.00%	2.00%
49	BF_Consolidated_Priority_3.c - Average		2.00%	2.00%	2.00%	1.0%
50	BF_Consolidated_Priority_4.a - Threshold		6.00%	6.00%	6.00%	4.00%
51	BF_Consolidated_Priority_4b - Threshold		4.00%	4.00%	4.00%	2.00%
52	BF_Consolidated_Priority_4c - Average		2.00%	2.00%	2.00%	1.0%
53	BF_Consolidated_Priority_5.a - Threshold		6.00%	6.00%	6.00%	6.00%
54	BF_Consolidated_Priority_5b - Threshold		4.00%	4.00%	4.00%	4.00%
55	BF_Consolidated_Priority_5c - Average		2.00%	2.00%	2.00%	2.00%
56	Service Repair Scheduling			4.00%	2.00%	1.0%
57	Creation of User ID's and Access Profiles		6.00%	4.00%	4.00%	4.00%
58	Creation of User ID's and Access Profiles		4.00%	4.00%	4.00%	4.00%
59	Creation of User ID's and Access Profiles		4.00%	4.00%	4.00%	4.00%

No.	MASL Title	Weighting Factors				
		After Cutover of the Help Desk Service Framework	After Cutover of the Applications Service Framework	After Cutover of the Desktop Service Framework	After Cutover of the Network Service Framework	After Cutover of all Service Frameworks. (including Data Center Service Framework)
60	Data File Restoration w/I 4 hrs					1.0%
61	Data File Restoration w/I 8 hrs					1.0%
62	Data File Restoration w/I 8 hrs					1.0%
63	Data File Restoration w/I 12 hrs					1.0%
64	Proposal Request – Planned Proposal Submission Notice		6.00%	3.00%	2.00%	1.0%
65	Proposal Request – Submission to Schedule		6.00%	3.00%	2.00%	1.0%
66	Moves – Threshold			4.00%	4.00%	4.00%
67	Moves – Average			4.00%	4.00%	4.00%
68	Add – Threshold			4.00%	4.00%	4.00%
69	Add – Average			4.00%	4.00%	4.00%
70	Remove – Threshold			4.00%	4.00%	4.00%
71	Remove – Average			4.00%	4.00%	4.00%
72	New Device Installation – Threshold			4.00%	4.00%	4.00%
73	New Device Installation – Average			4.00%	4.00%	4.00%
74	Customer Satisfaction Break Fix Requirement		10.00%	10.00%	10.00%	10.00%
75	Customer Satisfaction Work Request Requirement		10.00%	10.00%	10.00%	10.00%
76	Help Desk Handoff	25.00%	12.00%	8.00%	7.00%	
		200.00%	200.00%	200.00%	200.00%	200.00%

8.3. MASL Detail

This Section provides more detailed information on the MASLs.

8.3.1. Portfolio Applications Category Codes

- *Category 1a Application* – Full MASL where Contractor maintains the subcontract relationship with the 3rd party vendor or has done the development. Includes applications that have been formally transitioned from the 3rd party vendor to the Contractor. Must have a contingent work order or service request.

- *Category 1b Application* – MASL only on the Contractor custom developed software where the County has the subcontract relationship with the 3rd party vendor.

- *Category 2 Application* – No MASL; may have a contingent work order or service request.

8.3.2. Break-Fix MASL Priorities

- Priority 1 problems are those outages affecting the Life, Safety and Health Applications (or supporting hardware) that impact multiple End-Users. This Priority encompasses life threatening/security concerns at the highest level, and critical health care/services systems. This includes:

    - All voice down at any site (entire voice system, including Off-Net only)

    - Polinsky Center (entire site Data System) or Auto Attendant

    - Rosecrans Psych Hospital (entire site Data System)

    - Edgemoor Hospital (entire site Data System)

- Priority 2 problems are those outages affecting Mission Critical Applications (or supporting hardware) that impact multiple End-Users. These encompass outages that prevent a department or division from conducting primary business functions, or when systems essential to providing services to County residents are unavailable. These include:

    - All data down at a Type 1, 2 or 3 Site (entire data system)

    - Business Functionality Auto Attendants or ACDs

    - Video Teleconferencing Systems located at the Courts, Probation, and Public Defender

    - Internet access (entire County)

    - File Services (any file server)

    - Print Services (any print server)

    - E-mail (any e-mail server)

    - Any Interactive Voice Response (IVR) systems/applications

    - 800 Number Problems

- Remote Access via VPN or AS5300 (any AS5300 by location or the entire service

- County Badge Reader System (entire system only)

- All On-Net voice down at Type 1, 2 or 3 sites

- Priority 3 problems are any outages falling into the Priority 1 or Priority 2 levels, except that they affect a single End-User rather than multiple End-Users. These include:

  - Intranet access (entire County)

  - Jail Blue Phones

  - All data down at a Type 4, 5, or 6 Site (entire data system)

  - Informational Only Auto Attendants or ACDs

  - Voice Mail System (entire County)

  - Audio systems

  - All other Video Teleconferencing Systems

  - Alarm Circuits

  - SCADA monitoring Circuits

  - All On-Net voice down at Type 4, 5 & 6 sites

  - Any Multiple User Outage of a Non-Mission Critical Application

  - Priority 4 problems are those outages affecting business function Applications (or supporting hardware) that impacts multiple End-Users.

  - Priority 5 problems are any outages falling into the Priority 4 level, except that they affect a single End-User rather than multiple End-Users.

- Priority 6 problems are any outages affecting single or multiple End-Users, but where End-User production is not affected.

- Priority 7 problems are comprised of any IMAR, or CSRF that is the subject of an Work Request.

8.3.3. Break-fix MASL Reporting Exclusions

Tickets pertaining to the following shall not be included in the calculations for the Break-fix MASLs:

- **Status Tickets**

- **Internal Contractor Tickets**

- Wireless – including Cell Phones, Paging, and Blackberry equipment

- **Audio Equipment** – including Microphones, Overhead speakers, paging systems amplifiers and mixers, digital/analog voice recorders, public address systems, visit phones (jail/detention centers), Audio BoS squak boxes, and Polycom speaker phones,

- **Internet Video Streaming** – external internet video multi-cast streaming (Nine Systems) including video streaming for the Board of Supervisors and weddings on the Web.

- **Call Recording Solutions** – specialized software including Blue pumpkin and Nice.

- **Security Systems** for cameras, monitors, badge/door readers, and associated wiring.

- **Cable TV Systems** – Cox, Time Warner, County TV Network (CTN), Monitors, TV equipment, coaxial cable, splitters.

Contractor Access Limitations - When Contractor access can not be provided or a scheduled visit needs to be rescheduled, the Contractor will contact CoSD IT Operations to obtain the authority to freeze a ticket.

Power Outages – When a power outage occurs and problem tickets are generated, the power outage time will be excluded from the MASL reporting

window unless the Contractor affected the power outage issue. Following any power restoration, any issues identified would be reported within the MASLs.

8.3.4. Output Delivery Schedules

The distribution of reports by Contractor for managed print Services (as set forth in the Data Center Service Framework) shall be in accordance with the following schedule:

Location Description	Trips/Day	Drop Points per Location	Delivery days	Delivery Time(s) No Later Than
County Administration Center 1600 Pacific Coast Highway Rooms 211, 77, 72, & 92	4	2	Monday – Sunday	6:00 a.m., 10:00 a.m., 2:00 p.m., 4:00 p.m.
County Operations Center 5555 Overland Road Building 2 & 11	1	2	Monday - Friday	7:30 a.m.
Sheriff-Marshall's Data Center 1301 Front Street	1	1	Monday - Friday	7:30 a.m.
Ruffin Road Annex Suite C	1	1	Monday - Friday	7:30 a.m.
Downtown Courthouse 220 West Broadway	1	1	Monday - Friday	7:30 a.m.
Kearny Mesa Traffic Court	1	1	Monday - Friday	7:30 a.m.

8.3.5. Detailed MASL Specifications

8.3.5.1. Call Waiting

Identification Number	1.0 and 2.0
Name	Call Waiting
Definition	Length of time for caller to reach a live human voice.
Applicability	All Incoming Calls
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	(Sum(total calls answered within 90 seconds by an analyst) x 100

	Sum (agent calls))
	$\dfrac{(\text{Sum(total calls answered within 180 seconds by an analyst)}}{\text{Sum (agent calls))}}$ x 100

Base Measures	Includes: Calls answered by Help Desk analysts
	
	Excludes: VRU calls - Status/Break-Fix message
	                     VRU calls - Automation (e.g. password reset)
	                     Voice mails

Performance Requirement	90% within 90 seconds 99% within 180 seconds
Data Creation	Measured as the amount of time the phone rings plus the amount of time spent waiting in the queue before an analyst picks up the call. Excludes calls that are satisfied by the IVR system, calls abandoned, and voice mail.

8.3.5.2.   Break-Fix Resolution Confirmation Notice

Identification Number	3.0
Name	Break-Fix Resolution Confirmation Notice
Definition	Total time elapsed to provide all resolution confirmation notice via automated email notification and/or telephone call to the End-User. Help Desk may leave a message with a phone number to call back with any questions. For Break-Fix Tickets, if a message is left, the Break-Fix Ticket should remain open in a pending closure status for 24 hours to allow the End-User the opportunity to confirm the Break-Fix incident is Resolved.
Applicability	All Break-Fix tickets and Work Requests
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	$100 * \dfrac{(\text{\#Tickets-Work Requests with resolution confirmed within 30 minutes}}{\text{\# Tickets-Work Requests)}}$
Base Measures	Includes: Problem change orders only Excludes: Problems Resolved via automation (e.g. password reset), Problems Resolved on the first call, ICMS Work Requests
Performance Requirement	99% within 30 minutes of Break-Fix resolution
Data Creation	Measured as the amount of time that elapses between the time the Ticket is Resolved and the time the End-User is notified of resolution.

8.3.5.3.   Call Abandonment

Identification Number	4.0
Name	Call Abandonment
Definition	Frequency of caller hang-ups prior to reaching a live human voice

Applicability	All Incoming Calls
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	Number of Calls Abandoned Total Incoming Calls

Base Measures	Includes: Calls answered by Help Desk analysts
	
	Excludes: VRU calls - Status/Break-Fix message
	          VRU calls - Automation (e.g. password reset)
	          Voice mails

Performance Requirement	No more than 5% call abandonment rate
Data Creation	Help Desk Technical Support Analyst (TSA) answers phones and phone switch tracks abandoned calls

8.3.5.4.   Password Resets

Identification Number	5.0 and 6.0
Name	Password Resets
Definition	Length of time between password reset request and completion.
Applicability	All Requests.
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	100 X $\frac{(\sum \text{Total System Admin Events} < 30 \text{ mins.})}{(\sum \text{Total System Admin Events for Month})}$
Base Measures	Note- Sys Admin event may be completed by: a) authorized Help Desk staff (passwords, etc.), or b) designated Framework staff (Database rights, etc.)
Performance Requirement	95% within 30 minutes 99% within 60 minutes
Data Creation	Help Desk Technical Support Analyst (TSA) enters, updates, and closes a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.5.   Call Pick-Up

Identification Number	7.0 and 8.0
Name	Call Pick-Up
Definition	Length of time for caller to reach a live human voice.
Applicability	All calls to County Operator (e.g. 411 or 0)

Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	$\underline{\text{Sum(total calls answered within 30 seconds by an agent)}}$ x 100 Sum (agent calls) $\underline{\text{Sum(total calls answered within 60 seconds by an agent)}}$ x 100 Sum (agent calls)
Base Measures	Calls to County Operators such as 411.
Performance Requirement	95.0% within 30 seconds 97.5% within 60 seconds
Data Creation	Measured as the amount of time the phone rings plus the amount of time-spent waiting in the queue before an operator picks up the call. Excludes calls that abandoned, and voice mail.

8.3.5.6.   Overall System Availability

Identification Number	9.0
Name	Overall System Availability
Definition	[Note: The County will update this specification (other than the Performance Requirement) in consultation with Contractor during Transition to reflect the contemplated architecture for the network.] Percentage of time that key voice, data systems, and LAN switches are operational and available, excluding planned County-approved outages. The Voice System, Data Network system, and LAN Availability will be measured on a per Site basis. Each Type 1, 2, and 3 Site will be included in network Availability. The network equipment located at the San Diego Data Center (SDDC) has been eliminated from this MASL and not included. The circuits connecting the SDDC to the WAN have been moved to the Server Availability MASL. The Centralized Voice Mail system Availability will be counted on a single site basis. The centralized voice mail platform, the Access Lines from Site 1, and the Access Lines from Site 2 will be included in network Availability. The Conversant IVR platforms will each be counted as individual sites and included in the network Availability. As of 6/6/2003 there are five IVR platforms and are located at Sites 1, 2, 3, 4, and 53. The Call Management System (CMS) platforms will each be individually counted as individual sites and included in the network Availability. As of 6/6/2003 there are two CMS platforms and are located at Sites 1 and 2. The Availability of each site will be separately reported as per the algorithm below. For each site that falls below the Availability Requirement, 1/140 of the sum of the applicable Fee Reductions (Telecommunications-System Availability-All Systems (3.1.1.a) plus Local Area Network-System Availability-LAN Segments (4.1.1.a.)) will apply. The measure is the aggregate of voice, data, and LAN Availability. Availability is calculated by summing the Total Available Hours[1] for all of the key network components (PBX, WAN circuits, data router, core switches,

	ATM switches, LAN switches, Voice Mail System and Access Lines, Conversant IVR systems, and CMS servers) per site and subtracting the Total Downtime[2] of all key components for each site.[3]
	Note 1: Total Available Hours are dependant upon the Site Type, components being included. and the services provided at the Site
	Note 2: Total Downtime is calculated depending upon the type of Site, Services provided per site, and location.
	Note 3: Where redundant network capability exists at a site, only a single pathway's Availability hours will be counted in the total hours available. Correspondingly, system downtown hours will only be counted if redundant pathways fail (i.e. if one Lightstream ATM switch fails, thus swinging all traffic to the redundant ATM switch), the system will be deemed operational and no Break-Fix incidents hours will be included in the Total Downtime. LAN switch Break-Fix incidents will be counted individually in Total Downtime hours.
Applicability	Key network components include PBX, WAN circuits, data router, core switches, ATM switches, LAN switches, Voice Mail System and Access Lines, Conversant IVR systems, and CMS servers.
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	Sn Availability = $$\frac{\text{Sn Total Hours Available} - \text{Sn Total Hours Down}}{\text{Sn Total Hours Available}} \times 100$$ Legend: Sn = Site Type (n = 1, 2, or 3) Total Voice, WAN, & LAN Component Hours (Available)1 – Total Voice & WAN & LAN Component Hours (Down) / Total Voice, WAN & LAN Component Hours (Available) 1 x 100 Note : Total Voice, WAN, & LAN Component Hours (Available) = Total Voice, WAN, & LAN Component Hours for the Month minus planned Outage hours for the site.
Base Measures	AHD system, Telecom Performance Monitoring Systems
Performance Requirement	99.8%
Data Creation	A Problem record is created in the Help Desk's Problem tracking system when a Problem is detected. Telecom monitoring systems record system Break-Fix incidents. A monthly Break-Fix review meeting will be held between Contractor and County staff to determine the impact and duration of each Break-Fix incident.

8.3.5.7. System Availability - Internet/Intranet Access

Identification Number	10.0
Name	System Availability – Internet/Intranet Access
Definition	Percentage of times that Internet/Intranet Systems are available for use

	during Scheduled Uptime. Planned outages (e.g., for system maintenance), are not included in the Availability calculation.
	The Availability of each Server will be separately reported as per the algorithm below. Fee Reductions will be assessed on an individual Server basis with 1/xxx of the applicable Fee Reduction accumulated with each Server Failure (xxx = total number of internet/intranet servers in operation) .
	The start time for a Break-Fix is the earliest of the timestamp from the Server log, the time the failure was detected by the monitoring tools or the time of the first user Break-Fix incident call. It is expected that the start time may be adjusted after the failure when all the facts are known.
	The end time for the failure is the time at which full Server functionality is made available to the End-Users.
	The system Break-Fix time is equal to the difference between the start and end times. System Break-Fix time will be reviewed in the monthly MASL review meeting and may be adjusted.
Applicability	Internet/Intranet Access. This includes Web, Proxy, DHCP, DNS and Firewall servers. Servers that provide support for contractor service delivery (e.g. software distribution servers) are excluded from measurement. Both Intel and Unix Internet/Intranet Production Servers that are Contractor supported will be included in this measure
Hours of Availability	24x7x365, excluding Planned Break-Fixes.
Measurement Period	Monthly
Algorithm	System Break-Fix = SO minutes for each Server in each category
	Total Days per Month = WD
	Planned Break-Fix for each Server in each category for the Month = PO minutes.
	Total Uptime per Month per Server = [24 x 60 x WD] minutes – PO = TU
	System Availability % per Server = $((TU - \Sigma SO)/TU) \times 100$
Base Measures	Overall Server and network Availability. Components are
	1. Hardware Availability
	2. OS and Application Availability. For those (newer) Servers where the Availability of services can be monitored then the Break-Fix time is the time that the services the Server provides were unavailable as reported by the monitoring tools. For older servers the downtime is assessed manually from the Server log or via a monitoring agent.
Performance Requirement	99%
Data Creation	A Problem record is created in the Help Desk's Problem tracking system when a Problem is detected. This can be via the GMC, NOC, Help Desk Technical Support Analyst (TSA) or via a customer call.

8.3.5.8.   Transaction Response Time (Server Systems – Local Network)

Identification Number	11.0 and 12.0
Name	Transaction Response Time (Server Systems- Local Network)
Definition	Length of time host systems and networks transmit and process request and return data to End-User's screen. Response time will be measured using a defined sampling scheme, data transfer sizes and network locations.
Applicability	Server Systems – Local Network
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays.
Measurement Period	Monthly
Algorithm	1. Test transactions will be sent to an endpoint selected at random. This will be repeated 100 times, and the average response time of the 100 transactions will be recorded. 2. Step 1 will be repeated twice a day, at 9 a.m. and 10 a.m. as well as 2 p.m. and 3 p.m., two days a Week, on chosen business days at random. 3. At the conclusion of the Calendar Month, the recorded data for all samples will be added together, divided by the number of samples, and reported.
Base Measures	Time is measured from the instant a request is sent to the HOST system to the time the response is displayed on the End-User screen.
Performance Requirement	95% within 5 seconds 99% within 10 seconds
Data Creation	Created by enterprise monitoring tools

8.3.5.9. Transaction Response Time (Server Systems – Across WAN)

Identification Number	13.0 and 14.0
Name	Transaction Response Time (Server Systems – Across WAN)
Definition	Length of time host systems and networks transmit and process a request across the WAN and return data to End-User's screen.
Applicability	The Wide Area Network is divided into 8 segments. Each segment contains a single Type 1 site and all of the other sites that connect through that Type 1. The response time for each segment will be separately reported as per the algorithm below. For each segment that falls below the response time Requirement, 1/8 of the applicable Fee Reduction will apply. For the purposes of calculating the percentage of total MASLs met or missed, in the event that (i) five or more clusters meet or exceed the system Availability measurement in the applicable Measurement Period, then the MASL is considered achieved, or (ii) if four or fewer clusters meet or exceed the system Availability measurement in the applicable Measurement Period, then the MASL is considered failed. Response time will be measured using a defined sampling scheme, data transfer sizes and network locations defined.
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays

Measurement Period	Monthly
Algorithm	Test transactions will be sent to an endpoint selected at random. This will be repeated 100 times, and the average response time of the 100 transactions will be recorded. 2. Step 1 will be repeated twice a day, at 9 a.m. and 10 a.m. as well as 2 p.m. and 3 p.m. Two days a Week, on business days chosen at random. 3. At the conclusion of the Calendar Month, the recorded data for all samples will be added together, divided by the number of samples, and reported.
Base Measures	
Performance Requirement	95% within 10 seconds 99% within 30 seconds
Data Creation	Created by enterprise monitoring tools

8.3.5.10.   Transaction Response Time (E-mail systems)

Identification Number	15.0
Name	Transaction Response Time (E-mail Systems)
Definition	Length of time host systems and networks transmit and process request, and return data to End-User's screen.
Applicability	E-mail systems in use by the County. Response will be measured between the following e-mail environments. Exchange to Exchange Ten test messages shall be transmitted between each e-mail environment every hour of the workday and the average delivery time for each hour during that workday shall be calculated. The Requirement applies to each mail system each hour of each day.
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	1. Test transactions will be sent to each of the mail servers every 10 minutes between 6 am and 6 pm M-F. 2. The algorithm shall be: Number of e-mail transactions (6) x number of hours checked per day (12) x number of days per Month. The percentage is derived from the number of acceptable transactions / number of possible transactions
Base Measures	Time to deliver mail to another individual within the County organization using the mail systems managed by Contractor.
Performance Requirement	99.75% -- Internal e-mail delivered within 10 minutes
Data Creation	By the Mail System management tools

8.3.5.11.   Transaction   Response   Time   (Internet/Intranet systems)

Identification Number	16.0 and 17.0
Name	Transaction Response Time (Internet/Intranet Systems)
Definition	Length of time host systems and networks transmit and process request across the Internet/Intranet and return data to End-User's screen. Intranet/Internet response time will be measured by accessing the County Intranet (CWW)/Internet sites.
Applicability	Internet/Intranet systems. Response is measured from each site.
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	1. Test transactions will be sent to designated County endpoints for Intranet/Internet locations every 15 minutes. 2. These transactions will be tested 6 a.m. to 6 p.m. M-F. 3. The algorithm shall be: Number of internet/internet transactions per hour (4) x number of hours checked per day (12) x number of days per Month. The percentage is derived from the number of passing transactions / number of possible transactions
Base Measures	Time is measured using a defined sampling scheme, data transfer sizes and network locations.
Performance Requirement	Intranet -- 98% within 20 seconds Internet – 95% within 20 seconds
Data Creation	By Enterprise system management tools

8.3.5.12.   Back-ups (Production Environment)

Identification Number	18.0
Name	Back-ups (Production Environment)
Definition	Percentage of time that back-ups must complete successfully; frequency and minimum retention criteria for back-ups; actual data retention must meet County and/or legal requirements. Back-ups must be verified and re-run if unsuccessful.
Applicability	Completion
Hours of Availability	Not Applicable
Measurement Period	Monthly
Algorithm	All backup failures will be followed up with a Problem Ticket. All Problem Tickets relating to failed backup will be closed upon successful completion of backup. Total backups each Month = TB Failed backup that could not be rerun each Month = FB

	Performance = {[TB-FB]/TB}*100 %
Base Measures	All failed backups will have a Problem Ticket associated with them. All Tickets will be attended to and will be closed.
	Tape retention will be audited internally by Contractor and reported separately
Performance Requirement	99%
Data Creation	GMC technician managing backup of servers will open a Problem Ticket to indicate failed backup.
	Audit of tape retention will be conducted regularly by Contractor, and failure to comply with retention requirements will be reported to County.

8.3.5.13.   Back-ups –Test Servers

Identification Number	19.0
Name	Back-ups (Test Servers)
Definition	Percentage of time that back-ups must complete successfully; frequency and minimum retention criteria for back-ups; Back-ups must be verified and re-run if unsuccessful.
Applicability	Completion – Backups will be performed weekly and backup tapes will be retained for one Month.
Hours of Availability	Not Applicable
Measurement Period	Monthly
Algorithm	All backup failures will be followed up with a Problem Ticket. All Problem Tickets relating to failed backup will be closed upon successful completion of backup.
	Total backups each Month = TB
	Failed backup that could not be rerun each Month = FB
	Performance = {[TB-FB]/TB}*100 %
Base Measures	All failed backups will have a Problem Ticket associated with them. All Tickets will be attended to and will be closed.
	Tape retention will be audited internally by Contractor and reported separately
Performance Requirement	90%
Data Creation	Project technician managing backup of servers will open a Problem Ticket to indicate failed backup.
	Audit of tape retention will be conducted regularly, and failure to comply with retention requirements will be reported.

8.3.5.14.   Voice System Call Blocking

Identification Number	20.0
Name	Voice System Call Blocking
Definition	Percentage of calls blocked, or experiencing busy service, measured per trunk route.
Applicability	During busiest hour of Month.
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	Number of calls blocked or experiencing service busy per hour / total calls attempted per hour x 100%. This metric will be calculated for each hour of the Month for each phone switch and performance for the highest value hour reported.
Base Measures	Status Logs provided by telecom equipment
Performance Requirement	Blocking not to exceed 1% of all calls during peak calling periods by route unless otherwise directed by the County
Data Creation	System status logs generated by the PBX telephone equipment create metric data.

8.3.5.15.   System Availability - Mainframe

Identification Number	21.0
Name	System Availability - Mainframe
Definition	[Note: The County will update this specification (other than the Performance Requirement) in consultation with Contractor during Transition to reflect the contemplated solution.] Percentage of time that Systems are Available for use during Scheduled Uptime. Planned outages (e.g., for system maintenance) are not included in the Availability calculation.
Applicability	Mainframe
Hours of Availability	24x7x365, excluding Planned Break-Fixes.
Measurement Period	Monthly

Algorithm	LPAR SA16 minutes of scheduled Availability-outage minutes from AHD Tickets/LPAR SA16 minutes of scheduled Availability 2.LPAR SA17 minutes of scheduled Availability-outage minutes from AHD Tickets/LPAR SA17 minutes of scheduled Availability 3. Add results of steps 1 and 2 above, and divide by 2. The outages applied will be hardware, and/or foundational systems software. Foundational Systems Software is defined as ACF2, ADABAS, CA1, CA7, CICS, DB2, HSM, JES, OMEGAMON, MVS, SMS, TCP/IP, TSO or VTAM. *Note (a) –Outage minutes will be collected based upon the following two conditions:* *1) All Mainframe foundational system software or hardware outages except CICS, will be counted only when the entire system is considered down.* *2) For CICS regions, outages will be collected when any single CICS region is considered down. In addition, when ever two regions are down during the same time, only one Break-Fix will be counted for purposes of this MASL.*
Base Measures	Total number of hours for Month, number of hours unavailable for Month
Performance Requirement	99.9%
Data Creation	Metric data is created by recording system Break-Fixes incidents in the downtime-log Application.

8.3.5.16.   System Availability - AS400/others

Identification Number	22.0
Name	System Availability-AS400/Others
Definition	Percentage of time that Systems are available for use during Scheduled Uptime. Planned outages (e.g., for system maintenance) are not included in the Availability calculation. .
Applicability	AS400/Others
Hours of Availability	24x7x365, excluding Planned Outages.
Measurement Period	Monthly
Algorithm	Availability Measurement = ((Total Hours of Scheduled Availability – Downtime) / Total Hours Of Availability) x 100
Base Measures	Availability of the System to process information
Performance Requirement	99.8%
Data Creation	Metric data is created by recording system Break-Fixes in the downtime-log Application.

8.3.5.17.   System Availability - VAX

Identification Number	23.0
Name	System Availability-VAX

Definition	Percentage of time that Systems are available for use during Scheduled Uptime. Planned outages (e.g., for system maintenance) are not included in the Availability calculation.
Applicability	VAX
Hours of Availability	24x7x365, excluding planned outages.
Measurement Period	Monthly
Algorithm	Availability Measurement = ((Total Hours of Scheduled Availability – Downtime) / Total Hours Of Availability) x 100
Base Measures	Availability of system to process information
Performance Requirement	99.5%
Data Creation	Metric data is created by recording system Break-Fix incidents in the downtime_log Application.

8.3.5.18. System Availability - Mid-Range E10K

Identification Number	24.0
Name	System Availability – Mid-Range E10K
Compliance Date	10/04/2003
Definition	Percentage of time that each E10K system domain is available for use during scheduled uptime. Planned outages (e.g., for system maintenance) are not included in the availability calculation. The E10K system availability will be measured on a per domain basis
Applicability	Mid-range E10K server domains.
Hours of Availability	24x7x365, excluding planned outages
Measurement Period	Monthly
Algorithm	This algorithm will be used for each domain within the E10K Sun Server. E10K Domain System Availability Measurement = ((Total Hours of Domain Scheduled Availability – Domain Downtime) / (Total Hours of Domain Availability) x 100%
Base Measures	Total number of hours for month, number of hours unavailable for month. Overall System Availability. Components are Hardware Availability (Production Domains Only) OS and Application Availability (Production Domains Only)
Performance Requirement	99.8%
Data Creation	Metric data is created by recording system outages in the downtime log application

8.3.5.19. On-line Transaction Response Time

Identification Number	25.0 and 26.0
Name	On-line Transaction Response Time
Definition	Length of time for on-line systems to process request and return data to End-User's screen (i.e. end-to-end).
Applicability	This is a composite reporting of: Mainframe, AS400, and VAX
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	1. Test transactions will be sent to an endpoint selected at random. This will be repeated 100 times, and the average response time of the 100 transactions will be recorded. 2. Step 1 will be repeated twice a day, at 9 a.m. and 3:30 p.m., twice a Week, on chosen business days at random. 3. At the conclusion of the Calendar month, the recorded data for all samples will be added together, divided by the number of samples, and reported to County.
Base Measures	Average response time for 100 transactions sent from the Data Center to a randomly selected endpoint on the WAN.
Performance Requirement	95% within 2 seconds 99% within 5 seconds
Data Creation	Metric data is created by recording systems sample results.

8.3.5.20.   System File Restoration

Identification Number	27.0 and 28.0
Name	System File Restoration
Definition	Length of time to restore System files from the time of request until data is available for use.
Applicability	System File Restoration
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	(Number of System Files Restored in 4hrs (24 hrs)) / (Total Number of System Files Restoration Requests submitted) x 100
Base Measures	Time of receipt of a completely documented request until data is available for use
Performance Requirement	95% within 4 hours 99% within 24 hours
Data Creation	Metric data is created by Help Desk agent who creates a Problem tracking system record after a request form with completed and signed authorizing documentation is received by agent.

8.3.5.21.   Output Delivery

Identification Number	29.0
Name	Output Delivery
Definition	Timeliness for delivering centrally printed reports and microfiche to specifically defined End-User locations. Clarification: This metric is for Production Reports. Daily means 7 days a Week.
Applicability	All output
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	(Number of Output Delivery Requests Completed Correctly Within 2 hrs of the Anacomp Printing Schedule [(a)] / Total Number of Output Deliveries Submitted Within 2 hrs of the Anacomp Printing) x 100
Base Measures	Report delivery time, report print completion time.
Performance Requirement	95% within 2 hours of printing 7:30 a.m. to 3:30 p.m. daily 99% of output printed between 3:30 p.m. and 5:30 a.m. by 7:30 a.m. daily except for Sheriff's department. Sheriff's department output to be delivered by 6:30 a.m. daily
Data Creation	A combination of tracking normal delivery activity and missed delivery via calls to the Help Desk. The agent creates a Problem tracking system record on missed delivery activity.

8.3.5.22. Back-up Completion

Identification Number	30.0
Name	Back-up Completion
Definition	Percentage of time that back-ups must complete successfully. Back-ups must be verified and re-run if not successful.
Applicability	All Back-ups for Mainframe, Mid-range, VAX, and AS400.
Hours of Availability	Not Applicable
Measurement Period	Monthly
Algorithm	(Number of Backups Completed Successfully / Total Number of Backups Submitted) x 100
Base Measures	Percentage of the backups which were not completed during the Month.
Performance Requirement	99%
Data Creation	Metric data is created by Production Operations in the Help Desk's Problem tracking system database open back-up failure.

8.3.5.23. System Availability - Application Servers

Identification Number	31.0
Name	System Availability – Application Servers
Definition	Percentage of times that each Application Server is available for use during Scheduled Uptime. Planned outages (e.g., for system maintenance), are not included in the Availability calculation.

The Availability of each Server will be separately reported as per the algorithm below. Fee Reductions will be assessed on an individual Server basis with 1/xxx of the applicable Fee Reduction accumulated with each Server Failure (xxx = total number of Application servers in operation).

The start time for a Break-Fix incident is the earliest of the timestamp from the Server log, the time the failure was detected by the monitoring tools or the time of the first user Break-Fix incident call. It is expected that the start time may be adjusted after the failure when all the facts are known.

The end time for the failure is the time at which full Server functionality is made available to the End-Users.

The system Break-Fix time is equal to the difference between the start and end times. System Break-Fix time will be reviewed in the monthly MASL review meeting and may be adjusted. |
Applicability	All Application Production Servers that are County supported will be included in this measure.
Hours of Availability	24x7x365, excluding planned outages.
Measurement Period	Monthly
Algorithm	System Break-Fix = SO minutes for each Server in each category

Total Days per Month = WD

Planned Break-Fix for each Server in each category for the Month = PO minutes.

Total Uptime per Month per Server = [24 x 60 x WD] minutes – PO = TU

System Availability % per Server = $((TU - \Sigma\,SO)\,/TU)x100$ |
| **Base Measures** | Overall Server and network Availability. Components are

1. Hardware Availability

2. OS and Application Availability. For those (newer) servers where the Availability of services can be monitored then the Break-Fix time is the time that the services the Server provides were unavailable as reported by the monitoring tools. For older servers the downtime is assessed manually from the Server log or via a monitoring agent. |
| **Performance Requirement** | 99.8% |
| **Data Creation** | A Break-Fix Ticket is created in the Help Desk's Problem tracking system when a Problem is detected. This can be via the GMC, NOC, Help Desk Technical Support Analyst (TSA) or via a customer call. |

8.3.5.24.   System Availability - Infrastructure Servers

Identification Number	32.0
Name	System Availability – Infrastructure Servers
Definition	Percentage of times that Infrastructure Servers are available for use during Scheduled Uptime. The SAN Infrastructure Servers are excluded from this measure and tracked under 4.1.1d. Planned outages (e.g., for system maintenance), are not included in the Availability calculation. The Availability of each Server will be separately reported as per the algorithm below. Fee Reductions will be assessed on an individual Server basis with 1/xxx of the applicable Fee Reduction accumulated with each Server Failure (xxx = total number of file/print/mail servers in operation). The start time for a Break-Fix incident is the earliest of the timestamp from the Server log, the time the failure was detected by the monitoring tools or the time of the first user Break-Fix call. It is expected that the start time may be adjusted after the failure when all the facts are known. The end time for the failure is the time at which full Server functionality is made available to the End-Users. The system Break-Fix incident time is equal to the difference between the start and end times. System Break-Fix incident time will be reviewed in the monthly MASL review meeting and may be adjusted as mutually agreed upon by the parities.
Applicability	All Infrastructure Servers that are Contractor supported will be included in this measure.
Hours of Availability	24x7x365, excluding Planned Break-Fixes.
Measurement Period	Monthly
Algorithm	System Break-Fix = SO minutes for each Server in each category Total Days per Month = WD Planned Break-Fix for each Server in each category for the Month = PO minutes. Total Uptime per Month per Server = [24 x 60 x WD] minutes – PO = TU System Availability % per Server = $((TU - \Sigma SO)/TU) \times 100$
Base Measures	Overall Server and network Availability. Components are 1. Hardware Availability 2. OS and Application Availability. For those (newer) Servers where the Availability of services can be monitored then the Break-Fix time is the time that the services the Server provides were unavailable as reported by the monitoring tools. For older Servers the downtime is assessed manually from the Server log or via a monitoring agent.
Performance Requirement	99.8%
Data Creation	A Problem record is created in the Help Desk's Problem tracking system when a Problem is detected. This can be via the GMC, NOC, Help Desk Technical Support Analyst (TSA) or via a customer call.

8.3.5.25.   System Availability - SAN Servers

Identification Number	33.0
Name	System Availability – SAN Servers
Definition	Percentage of times that SAN Infrastructure Servers are available for use during Scheduled Uptime. Planned outages (e.g., for system maintenance), are not included in the Availability calculation. The Availability of each Server will be separately reported as per the algorithm below. Fee Reductions will be assessed on an individual Server basis with 1/xxx of the applicable Fee Reductions accumulated with each Server Failure (xxx = total number of file/print/mail servers in operation. The start time for a Break-Fix is the earliest of the timestamp from the Server log, the time the failure was detected by the monitoring tools or the time of the first user Break-Fix call. It is expected that the start time may be adjusted after the failure when all the facts are known. The end time for the failure is the time at which full Server functionality is made available to the End-Users. The system Break-Fix time is equal to the difference between the start and end times. System Break-Fix time will be reviewed in the monthly MASL review meeting and may be adjusted.
Applicability	All Production SAN Infrastructure Servers except those SAN Infrastructure Servers that provide support for contractor service delivery (e.g. software distribution servers) are excluded from this measurement.
Hours of Availability	24x7x365, excluding Planned Break-Fixes.
Measurement Period	Monthly
Algorithm	System Break-Fix = SO minutes for each Server in each category Total Days per Month = WD Planned Break-Fix for each Server in each category for the Month = PO minutes. Total Uptime per Month per Server = [24 x 60 x WD] minutes – PO = TU System Availability % per Server = $((TU - \Sigma SO)/TU) \times 100$
Base Measures	Overall Server and network Availability. Components are 1. Hardware Availability 2. OS and Application Availability. For those (newer) Servers where the Availability of services can be monitored then the Break-Fix time is the time that the services the Server provides were unavailable as reported by the monitoring tools. For older Servers the downtime is assessed manually from the Server log or via a monitoring agent.
Performance Requirement	99.8%
Data Creation	A Problem record is created in the Help Desk's Problem tracking system when a Problem is detected. This can be via the GMC, NOC, Help Desk

	Technical Support Analyst (TSA) or via a customer call.

8.3.5.26. Break-Fix (Test Servers)

Identification Number	34.0
Name	Break-Fix - Test Servers
Definition	Time to restore service from time of Break-Fix report
Applicability	Test Servers (PTS)
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	100 X ($\sum$ total PTS < xx hr events for Month) ($\sum$ total PTS events for Month) Note: xx = is the applicable Performance Requirement hours
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion
Performance Requirement	90% w/i 48 hours
Data Creation	Help Desk Technical Support Analyst (TSA) enters Ticket; Workflow updates, and Resolves a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.27. Low Risk Work Request Budget Performance

Identification Number	35.0
Name	Low Risk Work Request Budget Performance
Definition	Percentage of Low Risk Work Requests completed within baseline budgeted hours
Applicability	All Low Risk Work Requests regarding Portfolio Applications, EXCEPT: • Work Requests provided at no cost or fixed price to the County. • Level of effort (LOE), user support, preventive maintenance and Application administration (table maintenance and data modification.)
Hours of Availability	N/A
Measurement Period	Monthly
Algorithm	(# Low Risk Work Requests completed within baseline budget) / (# Low Risk Work Requests completed) *100

Base Measures	Billable hours expended
Performance Requirement	90%
Data Creation	Metric data is created by Application analysts in the Contractor Applications Work Request management system.

8.3.5.28.   Low Risk Work Request Schedule Performance

Identification Number	36.0
Name	Low Risk Work Request Schedule Performance
Definition	Percentage of Low Risk Work Requests completed within schedule baseline
Applicability	All Low Risk Work Requests for Portfolio Applications, EXCEPT: • Level of effort (LOE), user support, preventive maintenance and Application administration (table maintenance and data modification.)
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	(# Low Risk Work Requests completed within baseline schedule) / (# Low Risk Work Requests completed) *100
Base Measures	Business Days
Performance Requirement	90%
Data Creation	Metric data is created by Application analysts in the Contractor's Applications Work Request management system.

8.3.5.29.   Medium Risk Work Request Budget Performance

Identification Number	37.0
Name	Medium Risk Work Request Budget Performance
Definition	Percentage of Medium Risk Work Requests completed within baseline budgeted hours plus 10%.
Applicability	All Medium Risk Work Requests, EXCEPT: • Work Requests provided at no cost or fixed price to the County. • Level of effort (LOE), user support, preventive maintenance and

	Application administration (table maintenance and data modification.)
Hours of Availability	N/A
Measurement Period	Monthly
Algorithm	(# Medium Risk Work Requests completed within (baseline budget +10%)) / (# Medium Risk Work Requests completed) *100
Base Measures	Billable hours expended
Performance Requirement	100%
Data Creation	Metric data is created by Application analysts in the Contractor's Applications Work Request management system.

8.3.5.30.   Medium Risk Work Request Schedule Performance

Identification Number	38.0
Name	Medium Risk Work Request Schedule Performance
Definition	Percentage of Medium Risk Work Requests completed within schedule baseline +10%.
Applicability	All Medium Risk Work Requests EXCEPT: • Level of effort (LOE), user support, preventive maintenance and Application administration (table maintenance and data modification.)
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	(# Medium Risk Work Requests completed within (baseline schedule +10%)) / (# Medium Risk Work Requests completed) *100
Base Measures	Business Days
Performance Requirement	100%
Data Creation	Metric data is created by Application analysts in Contractor's Applications Work Request management system.

8.3.5.31.   High Risk Work Request Budget Performance

Identification Number	39.0
Name	High Risk Work Request Budget Performance
Definition	Percentage of High Risk Work Requests completed with a Cost Performance Index (CPI) of 0.95, as described below, or greater.
Applicability	All High Risk Work Requests, EXCEPT: • Work Requests provided at no cost or fixed price to the County. • Level of effort (LOE), user support, preventive maintenance and Application administration (table maintenance and data modification.)
Hours of Availability	N/A
Measurement Period	Monthly
Algorithm	(# High Risk Work Requests completed with a CPI to baseline budget >= 0.95) / ((# high risk and large work requests completed) * 100)
Base Measures	Billable hours expended
Performance Requirement	100%
Data Creation	Metric data is created by Application analysts in Contractor's Applications Work Request management system.

8.3.5.32.   High Risk Work Request Schedule Performance

Identification Number	40.0
Name	High Risk Work Request Schedule Performance
Definition	Percentage of large work requests completed with a schedule performance index (SPI) 0.95, as described below, or greater, measured on the baseline completion date for the Work Request.
Applicability	All High Risk Work Requests, EXCEPT: • Level of effort (LOE), user support, preventive maintenance and Application administration (table maintenance and data modification.)
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	(# High Risk Work Requests completed with a SPI to baseline schedule >= 0.95)

	/ ((# High Risk Work Requests completed) * 100)
Base Measures	Business Days
Performance Requirement	100%
Data Creation	Metric data is created by Application analysts in Contractor's Applications Work Request management system.

8.3.5.33. Break-Fix (Priority 1)

Identification Number	41.0, 42.0 and 43.0
Name	Break-Fix (Priority 1) – Multiple User Break-Fix
Definition	Time to restore service from time of Break-Fix incident report
Applicability	Break-Fix incident affecting Life/Safety/Health Applications and all related hardware and network equipment.
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	$$\frac{100 \times (\sum \text{total P1} < \text{xx hr events for Month})}{(\sum \text{total P1 events for Month})}$$ Note: xx = is the applicable Performance Requirement hours Note: Priority 1 = P1
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion
Performance Requirement	90% w/i 4 hours and 95% w/i 8 hours and The average time to resolve of the remaining 5% (i.e., the longest to resolve) will not exceed 16 hours. Contractor will immediately respond on-site to the offices of the Board of Supervisors. Site visits will be coordinated via the County Technology Office representative.
Data Creation	Help Desk Technical Support Analyst (TSA) enters Ticket; Workflow updates, and resolves a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.34. Break-Fix (Priority 2)

Identification Number	44.0, 45.0 and 46.0
Name	Break-Fix (Priority 2) – Multiple User Break-Fix
Definition	Time to restore service from time of Break-Fix report
Applicability	Break-Fix affecting Mission Critical Applications and all related hardware and network equipment.
Hours of Availability	24x7x365

Measurement Period	Monthly
Algorithm	100 X $\frac{(\sum \text{total P2} < \text{xx hr events for Month)}}{(\sum \text{total P2 events for Month)}}$ Note: xx = is the applicable Performance Requirement hours Note: Priority 2 = P2
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion
Performance Requirement	90% w/i 6 hours 95% w/i 10 hours The average time to resolve of the remaining 5% (i.e., the longest to resolve) will not exceed 20 hours. Contractor will Immediately respond on-site to the offices of the Board of Supervisors. Site visits will be coordinated via the CTO representative.
Data Creation	Help Desk Technical Support Analyst (TSA) enters Ticket; Workflow updates, and Resolves a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.35.   Break-Fix (Priority 3)

Identification Number	47.0, 48.0 and 49.0
Name	Break-Fix (Priority 3) – Single User Break-Fix
Definition	Time to restore service from time of Break-Fix report
Applicability	Break-Fix affecting Priority 1 or 2 Applications and all related hardware and network equipment for a single user. VIP TREATMENT Whenever a VIP Ticket is received, the Help Desk will page-out the business unit service delivery manager, workflow and will notify the technicians of the Ticket. Outside of the normal business hours (M-F 6am-6pm) on-call technicians will be notified of VIP Tickets.
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	100 X $\frac{(\sum \text{total P3} < \text{xx hr events for Month)}}{(\sum \text{total P3 events for Month)}}$ Note: xx = is the applicable Performance Requirement hours Note: Priority 3 = P3
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion
Performance Requirement	90% w/i 8 hours 95% w/i 12 hours The average time to resolve of the remaining 5% (i.e., the longest to resolve) will not exceed 24 hours. Contractor will Immediately respond on-site to the offices of the Board of Supervisors. Site visits will be coordinated via the CTO representative.
Data Creation	Help Desk Technical Support Analyst (TSA) enters Ticket; Workflow updates,

	and Resolves a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.36. Break-Fix (Priority 4)

Identification Number	50.0, 51.0 and 52.0
Name	Break-Fix (Priority 4) – Multiple User Break-Fix
Definition	Time to restore Service from time of Break-Fix report
Applicability	Break-Fix affecting Business Function Applications and all related hardware and network equipment. VIP TREATMENT Whenever a VIP Ticket is received, the Help Desk pages-out the business unit service delivery manager, workflow will notify the technicians of the Ticket. Outside of the normal business hours (M-F 6am-6pm) on-call technicians will be notified of VIP Tickets.
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays [Note: The Telecom Break-Fix measures will work to a 8am to 5pm Service Window]
Measurement Period	Monthly
Algorithm	$$100 \times \frac{(\sum \text{total P4} < \text{xx hr events for Month})}{(\sum \text{total P4 events for Month})}$$ Note: xx = is the applicable Performance Requirement hours Note: Priority 4= P4
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion
Performance Requirement	90% w/i 10 hours 95% w/i 16 hours The average time to resolve of the remaining 5% (i.e., the longest to resolve) will not exceed 32 hours. Contractor will Immediately respond on-site to the offices of the Board of Supervisors. Site visits will be coordinated via the CTO representative.
Data Creation	Help Desk Technical Support Analyst (TSA) enters Ticket; Workflow updates, and Resolves a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.37. Break-Fix (Priority 5)

Identification Number	53.0, 54.0 and 55.0
Name	Break-Fix (Priority 5) – Single User Break-Fix
Definition	Time to restore service from time of Break-Fix report

Applicability	Break-Fix affecting Business Function Applications and all related hardware and network equipment for a single user. VIP TREATMENT Whenever a VIP Ticket is received, Help Desk will page-out the business unit service delivery manager, workflow will notify the technicians of the Ticket. Outside of the normal business hours (M-F 6am-6pm) on-call technicians will be notified of VIP Tickets.
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays [Note: The Telecom Break-Fix measures will work to a 8am to 5pm Service Window]
Measurement Period	Monthly
Algorithm	$$100 \times \frac{(\sum \text{ total P5} < \text{xx hr events for Month})}{(\sum \text{ total P5 events for Month})}$$ Note: xx = is the applicable Performance Requirement hours Note: Priority 5 = P5
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion
Performance Requirement	90% w/i 12 hours 98% w/i 24 hours The average time to resolve of the remaining 5% (i.e., the longest to resolve) will not exceed 48 hours. Contractor will Immediately respond on-site to the offices of the Board of Supervisors. Site visits will be coordinated via the CTO representative.
Data Creation	Help Desk Technical Support Analyst (TSA) enters Ticket; Workflow updates, and Resolves a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.38.   Service Repair Scheduling

Identification Number	56.0
Name	Service Repair Scheduling
Definition	The elapsed time from the time the call is determined to be a desktop Break-Fix Ticket until the user is contacted to schedule an on-site service appointment.
Applicability	All Desktop Break-Fix Resolution Tickets
Hours of Availability	6a.m. – 6 p.m. Monday-Friday
Measurement Period	Monthly
Algorithm	$$100 \times \frac{\text{Total Desktop Tickets responded to within 90 minutes}}{\text{Total Desktop Break-Fix Resolution Tickets}}$$
Base Measures	Desktop Break-Fix Resolution Tickets only
Performance Requirement	98% within 90 minutes
Data Creation	Measured as the amount of time that elapses between the time the Ticket is

	reported to the Help Desk and the time the customer is provided an acknowledgement of the Problem and an estimated time for technician response.

8.3.5.39. Creation of User Ids and Access Profiles

Identification Number	57.0, 58.0 and 59.0
Name	Creation of User Ids and Access Profiles
Definition	Time elapsed to fulfill administration services requests if a request requires multiple Tickets (children) these still count as one ID request and the elapsed time is that for all child Tickets to be completed.
Applicability	All requests
Hours of Availability	6a.m. – 6 p.m. Monday-Friday
Measurement Period	Monthly
Algorithm	Note: User-ID/Access requests = UID/A (#UID/A requests-#UID/A requests completed on-time) *100 #UID/A requests)
Base Measures	Ticket Duration: Day of Help Desk Receipt through Day of Workflow Completion
Performance Requirement	90% within 2 days 98% within 5 days 100% average time not to exceed 3 days
Data Creation	The Helpdesk opening a Ticket and the GMC analyst closing the Ticket to indicate completion of the work creates metrics data.

8.3.5.40. Data File Restoration

Identification Number	60.0, 61.0, 62.0 and 63.0
Name	Data/File Restoration
Definition	Length of time to begin file restore from the time of request.
Applicability	All requests for file restoration including those from users, Applications support and operations. Each file or data restoration request must be initiated through an AHD Ticket. Each request for restoration must contain the required file name and file date. When an entire directory needs restoration the specific directory name and date must be provided. When a merge is required, the restoration start time will be the time that the merge is begun.
Hours of Availability	24x7x365
Measurement Period	Monthly
Algorithm	Number of restores begun within 4 hrs / Total number of restores * 100 Number of restores begun within 8 hrs / Total number of restores * 100

Base Measures	
Performance Requirement	On-site Tapes 95% within 4 hrs 99% within 8 hrs Off-site Tapes 95% within 8 hrs 99% within 12 hrs
Data Creation	A Problem record is created in the Help Desk's Problem tracking system when a restore request is received.

8.3.5.41. Proposal Request

Identification Number	64.0 and 65.0
Name	Proposal Request
Definition	Length of time to provide proposal information for Work Requests including schedule and cost estimates. The proposal submission information is broken into two measures: 1) Proposal for Requirements Analysis 2) Proposal for Development. 1) Proposal for Requirements Analysis – The requestor will be provided a requirements analysis schedule and budget proposal within 2 business days or otherwise negotiated with requester. 2) Proposal for Development – The requester will be provided a development schedule and budget proposal within 5 business days of the completion of the requirements analysis or otherwise negotiated with requester.
Applicability	All Work Requests for Proposals
Hours of Availability	Monday – Friday 6 a.m. to 6 p.m., excluding the County's holidays
Measurement Period	Monthly
Algorithm	Proposal Requirements Analysis 100 x (A/B) (A) = Total Proposal for Requirements Analysis Completed within 2 business days (B) = Total Proposal for Requirements Analysis requested Proposal for Development 100 x (C/D) (C) = Total Proposal for Development Completed within 5 business days (D) = Total Proposal for Development requested
Base Measures	Ticket Duration: Help Desk Receipt through Workflow Completion

Performance Requirement	95% Proposal Requirements Analysis completed within 2 business days
	95% Proposal for Development completed within 5 business days
Data Creation	The Service Framework Project Manager will indicate the completeness of the requirements, provide a date for proposal submission, and County Contracts will provide the date the proposal was sent to the County.

8.3.5.42.   Moves

Identification Number	66.0 and 67.0
Name	Moves
Definition	Time elapsed between the receipt of the request and the completion of that request. If a request requires multiple Tickets (children) all of these Tickets will be counted as a single request and the elapsed time is that for all child Tickets to be completed. As a result, only the parent Ticket is measured.
Applicability	All Requests Except:
	Projects
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	*(*(Move requests - # Move requests not completed on time) / # Move requests) *100
Base Measures	Ticket Duration: Day of Help Desk Receipt through Day of Workflow Completion
Performance Requirement	95% w/i 5 days, or by the requested completion date if the Move request specifies a completion date that exceeds 5 days following the receipt of the Move request.
	100% average not to exceed 5 days of the receipt of the Move request, or the requested completion date if the Move request specifies a completion date that exceeds 5 days following the receipt of the Move request.
Data Creation	Help Desk Technical Support Analyst (TSA) enters, updates, and closes a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.43.   Add

Identification Number	68.0 and 69.0
Name	Add
Definition	Time elapsed between the receipt of the Work Request and the completion of that request. If a request requires multiple Tickets (children) all of these Tickets will be counted as a single request and the elapsed time is that for all child Tickets to be completed. As a result, only the parent Ticket is measured.
Applicability	All Requests Except:
	Projects

Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	*(*(Add requests - # Add requests not completed on time) / # Add requests) *100
Base Measures	Ticket Duration: Day of Help Desk Receipt through Day of Workflow Completion
Performance Requirement	95% w/i 3 days, or by the requested completion date if the Work Request specifies a completion date that exceeds 3 days following the receipt of the request. 100% average not to exceed 3 days of the receipt of the Add request, or the requested completion date if the Add request specifies a completion date that exceeds 3 days following the receipt of the Add request.
Data Creation	Help Desk Technical Support Analyst (TSA) enters, updates, and closes a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.44.   Remove

Identification Number	70.0 and 71.0
Name	Remove
Definition	Time elapsed between the receipt of the Work Request and the completion of that request. If a request requires multiple Tickets (children) all of these Tickets will be counted as a single request and the elapsed time is that for all child Tickets to be completed. As a result, only the parent Ticket is measured.
Applicability	All Requests Except: Projects
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays
Measurement Period	Monthly
Algorithm	*(*(Remove requests - # Remove requests not completed on time) / # Remove requests) *100
Base Measures	Ticket Duration: Day of Help Desk Receipt through Day of Workflow Completion
Performance Requirement	95% w/i 3 days, or by the requested completion date if the Work Request specifies a completion date that exceeds 3 days following the receipt of the request. 100% average not to exceed 3 days of the receipt of the Remove request, or the requested completion date if the Remove request specifies a completion date that exceeds 3 days following the receipt of the Remove request.
Data Creation	Help Desk Technical Support Analyst (TSA) enters, updates, and closes a Problem Ticket in Help Desk's Problem tracking system.

8.3.5.45.   New Device Installation

Identification Number	72.0 and 73.0
Name	New Device Installation
Definition	Time elapsed between the receipt of a new device order and the completion of the order. Includes initial hook up, diagnostic testing, delivery, staging and configuration. In the event that a request requires multiple Tickets (children), all Tickets will be counted as a single Install and the elapsed time is that for all child Tickets to be completed. As a result, only the parent Ticket is measured.
Applicability	All Requests
Hours of Availability	6 a.m. to 6 p.m. Monday – Friday, excluding the County's holidays

[Note: The Telecom New Install measures will work to a 8am to 5pm Service Window] |
Measurement Period	Monthly
Algorithm	((#Install requests - #Install requests not completed on-time) / #Install requests) *100
Base Measures	Ticket Duration: Day of Help Desk Receipt through Day of Workflow Completion
Performance Requirement	95% w/i 10 days, or by the requested completion date if the installation request specifies a completion date that exceeds 10 days following the receipt of the installation request.

100% average not to exceed 10 days |
| Data Creation | Help Desk Technical Support Analyst (TSA) enters, updates, and closes a Problem Ticket in Help Desk's Problem tracking system. |

8.3.5.46.   Surveys

Identification Number	74.0 and 75.0
Name	Surveys
Definition	The End-User evaluation of the services provided by Contractor. A total of approximately 200 surveys per Week will be distributed including roughly 100 Break-Fix and 100 Work Request (WR) Tickets.
Applicability	All Service Frameworks and services except non-MASL'ed County services.
Hours of Availability	24x7x365
Measurement Period	Monthly

Algorithm	<u>Positive questions percentage</u> – the percentage of questions with a passing score
	Pos % = Number of passing survey questions / Total survey questions
	<u>Overall question score</u> – the average score for all answered survey questions
	Overall Question Score = Sum of all questions answered with 1-5 response $\qquad$ Total number of questions answered with 1-5 response
	The surveys will be rated on a 5 point scale (1- highly unsatisfactory to 5-highly satisfied). Each survey question will be reported as passing, failing, or not counted.
	Passing survey questions – any question that is responded with a rating of 3, 4, or 5.
	Failing survey questions – any question that is responded with a rating of 1 or 2.
	Not counted questions – any question that is responded with an N/A.
Base Measures	***Break-Fix surveys*** – measure all Break-Fix Tickets regardless of Service Framework or status but active during the last 30 days: Help Desk Surveys – collects responses for Break-Fix first call Resolved Tickets Service Technician Surveys – collect responses for Break-Fix Tickets that require a technician to address/fix the Problem identified. ***Work Request Surveys*** – measure all Work Request Tickets that have closed within the prior 30 days

Performance Requirement	**Initial Requirements**:
	Break-Fix Monthly Requirements:
	- 85% Positive Question Percentage OR
	- 3.75 Overall Question Score
	Work Request (WR) Monthly Requirements:
	- 85% Positive Question Percentage OR
	- 3.75 Overall Question Score
	Improvement Requirements:
	The Survey Requirements consist of the following levels:
	Break-Fix Monthly Requirements:
	- 90% Positive Question Percentage or
	- 4.1 Overall Question Score
	Work Request (WR) Monthly Requirements:
	- 90% Positive Question Percentage or
	- 4.1 Overall Question Score
	Note:
	A low volume of survey responses will not impose higher Performance Requirements than stated in this MASL Specification Sheet. .
	If negative responses are submitted for services outside of the Contractor's scope of contractual responsibility, then the affected negative surveys will be negotiated and agreed upon with CTO before removal from the submitted survey counts.
	Subject to re-evaluation to increase improvement Requirement by 1% on a monthly basis until 95% is reached.
Data Creation	All survey responses are tracked within the Survey Tracking system

8.3.6.   Transitional MASLs

The County recognizes that transitioning from one service provider to another requires a unique level of cooperation and facilitation between the Legacy Provider and the selected provider (i.e., Contractor). In general, the Contractor will assume responsibility for Service Framework-specific MASLs upon Cutover of the applicable Service Framework.   The Contractor will not be responsible for MASLs (or portions of MASLs) relating to Service Frameworks that are not within its control. For MASLs that span Service Frameworks (e.g., Break-Fix MASLs), the Contractor will have responsibility when the fix is within a Service Framework for which the Contractor has already assumed control and responsibility. Active MASLs by Transition phase are listed in Section 8.2. In addition, the County has identified areas where transitional MASLs are appropriate to mitigate confusion and maintain service level commitments to County End-Users.

8.3.6.1.   Help Desk Transition MASL

8.3.7.   The Help Desk MASLs are defined for the period of transition from the Legacy Provider to the Contractor. These MASLs will go into effect at the start of the Help Desk Service Framework transition period and will stay in effect until the transition of all the Service Frameworks are complete.   The Help Desk Transition MASLs will include:

- Help Desk Handoff – Identification Number 76.0. Total time elapsed from the receipt of a Help Desk call by the Contractor to the time the Contractor receives confirmation of receipt by the Legacy Provider – elapsed time will be 15 minutes or less for 99% of the calls on a 24x7x365 basis. If the call is incorrectly passed to the Legacy Provider (e.g., if Cutover has already occurred for the Applications Services Framework, and the Contractor incorrectly passes an Applications Services-related break-fix call to the Legacy Provider), then the elapsed time will encompass the receipt of the call information back from the Legacy Provider. This MASL excludes calls resolved on the first call.

8.3.7.1.   Application Services Transition MASL

There are no anticipated transitional MASLs for the transition of the Application Services Framework.

8.3.7.2.   Desktop Services Transition MASL

There are no anticipated transitional MASLs for the transition of the Desktop Services Framework.

8.3.7.3.   Network Services Transition MASL

The Network Services Transition MASLs are defined for the period of transition from the Legacy Provider to the Contractor. These MASLs will go into effect at Cutover of the Network Services Framework and will stay in effect until the Cutover of the Network Services Framework and the Cutover of the Data Center Framework transition have been completed. In some cases, the Contractor will need to work with the County and the Legacy Provider to ensure the MASL sub-measurements are appropriately aligned with responsibilities during transition, e.g., on MASLs relating to response times, ensuring that network transmission times are differentiated from host computer processing times. The Network Services Transition MASLs will include, at a minimum:

- **Overall System Availability** – The percentage of time, end-to-end, that Network Services are available to End-Users, including all voice and data

networks – 99.8% availability on a 24x7x365 basis, excluding planned outages.

8.3.7.4.   Data Center Services Transition MASL

There are no anticipated transitional MASLs for the transition of the Data Center Services Framework.

8.3.7.5.   Cross Functional Transition MASL Detail

8.3.8.   There are no anticipated transitional MASLs for the transition of the Cross Functional Services Framework.

8.4.   Special Requirements

In addition to the MASLs, Contractor shall comply with the following special requirements:

Special Requirements

Department	Requirement
All Departments	Approximately 250-300 individual End-Users will be designated as VIPs by the County. Any break-fix ticket from a VIP will be immediately escalated for resolution by the Contractor and resolved as soon as possible on 24x7x365 basis.
Registrar of Voters (ROV)	The Registrar of Voters conducts on average two (2) statewide elections each fiscal year and, on average, four (4) additional special elections. • For statewide elections, immediate on-site response to all election related IT and Telecommunication Problems is required for a five-Month period beginning 120 calendar days prior to and 30 calendar days after Election Day. • For special elections including non-statewide countywide elections, immediate on-site response to all election related IT and Telecommunication Problems is required for a one-Month period prior to and including Election Day. . Note: Special elections may occur at any time during the year.
HHSA	Immediate (on-site, if needed) response, 24x7x365, for agency's public hotlines, and back-up phone service for the Polinsky Children's Center, Psychiatric Hospital and Edgemoor Hospital
OES	Immediate on-site response for all IT and Telecom during declared emergency events (approximately 15 days per year)
Tax Collector	Immediate on-site response 90 days per year for Tax Collector's systems
Public Administrator	Immediate on-site response for Public Administrator Auction System 8 days per year

Assessor	Immediate on-site response for the Document Recording, Assessment Roll and Fictitious Business Name Systems to meet statutory requirements of daily recording of information
Treasurer	Maximum 2-hour resolution for the Investment Manager and/or Assistant Investment Manager PCs.
Public Works	Level 1 response for Maintenance Management System and On-Line Time Sheet System on Thursdays and Fridays

END OF SCHEDULE